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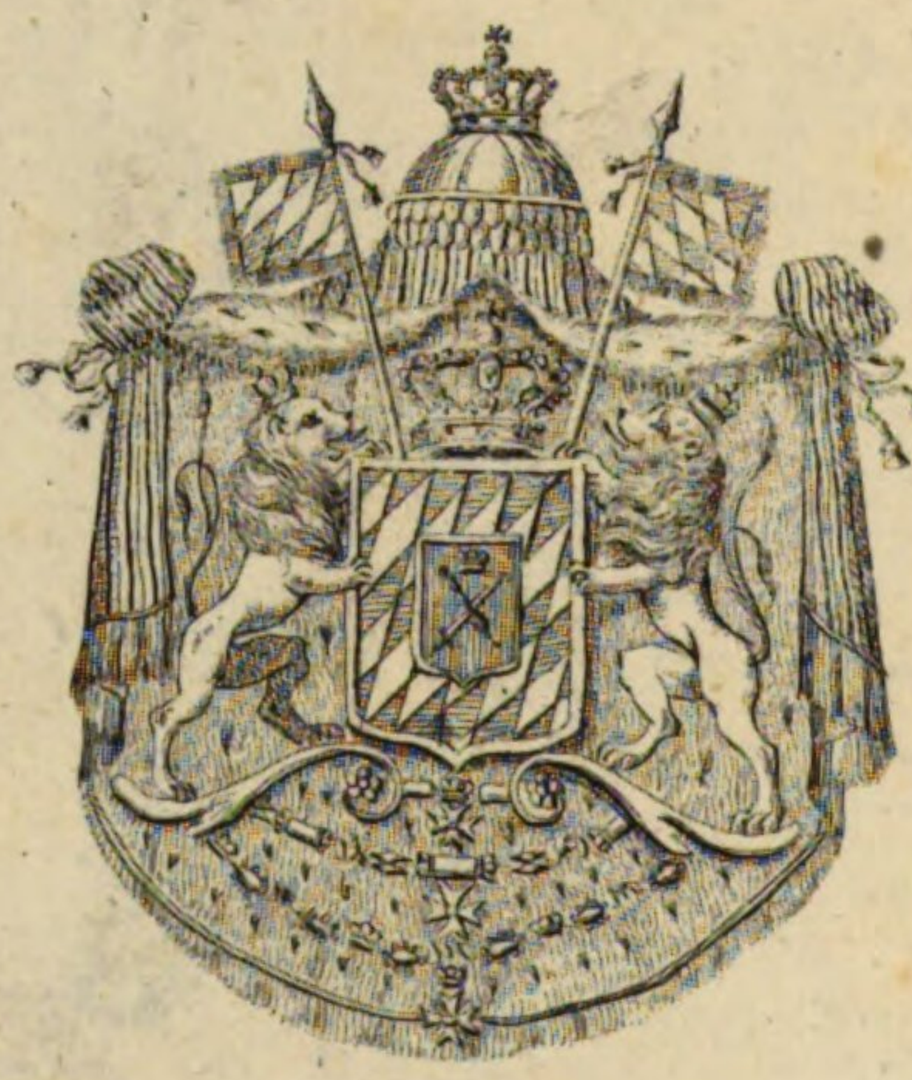

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DENDROLOGIA BRITANNICA,

OR

TREES AND SHRUBS

THAT WILL LIVE IN THE OPEN AIR OF BRITAIN

THROUGHOUT THE YEAR.

A WORK USEFUL TO

PROPRIETORS AND POSSESSORS OF ESTATES,

IN SELECTING SUBJECTS FOR

PLANTING WOODS, PARKS AND SHRUBBERIES;

AND ALSO

TO ALL PERSONS WHO CULTIVATE TREES AND SHRUBS.

By P. W. WATSON, F.L.S.

HONORARY MEMBER OF THE HULL LITERARY AND PHILOSOPHIC SOCIETY.

COTTINGHAM, NEAR HULL.

VOL. I.

PLATE 1—80.

LONDON:

PRINTED FOR THE AUTHOR;

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1825.

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INTRODUCTION.

CONSIDERING the present advanced state of Botany, it seems extraordinary that no person, in our country, to my knowledge, since the time of Evelyn, who had the necessary adequate pretensions to Botanic science, should have taken up, in a special manner, the Dendrologic Department of the science, which introduces to our contemplation those generally noble and always pleasing objects—Trees and Shrubs—composing our forests, woods, and plantations; ornamenting our parks and pleasure grounds; and whose varying, nascent vegetation we rapturously hail at every vernal approach. The most majestic inequalities of the globe, the most sublime mountain scenery, when naked and destitute of vegetation, and particularly of those noble objects Trees, present but arid sensations.

The frequent beauty of the objects themselves, arising from their multifarious varieties of structure in stem, branches, foliage and fruit; the protection they afford, particularly in tropic countries, from the ardent sun, the manifold uses they present to us in their solid parts and chemical properties, in the numerous purposes of the arts, supplying us with food, medicine, fuel, clothing, durable materials for the construction of our stationary habitations, and for those now to us familiarised but surprising wandering ones (ships*) that plough the great deep and enable us to pursue, in every direction, the outline and expanse of the mighty ocean.

Impulsion, (Growth.)

We must, above all, be struck with the force of nature in the production of objects, in many cases so extremely bulky, from such minute origins, replete with such various and often contrary properties, though they may grow close together, and imbibe, as far as we can perceive, the same substances, fluids, and gasses from the earth and atmosphere; some producing nutritive and agreeable food, while others yield most deadly poison.

* The camel was called the ship of the deserts, as alone affording to the adventurous traveller the means of traversing those oceans of burning sand in the interior of Africa.

It would appear that each being, animal or vegetable, has a distinct and peculiar power (property) to separate, combine and modify the few original elements (perhaps only one! Newton thought three) so as to constitute, when aided by that wonderful vital principle (life) whose essence is not in our power to comprehend, their various forms, figures, properties and products.

These often immense masses are the offspring most frequently of very small seeds, whose embryos are frequently even invisible to the naked eye. For what apparent relation is there between the embryo of the minute seed of the birch (betula) or poplar (populus) or even of elms (ulmus) oaks (quercus) &c. &c. and the various progenies that nature elicits from those minute bodies, by her unknown modifications of their pristine, material elements.

Recorded dimensions of remarkably large Trees.

The dimensions of some remarkably large Trees are recorded in Hunter's Evelyn and other books. In some publications, the magnitude is stated so large that credence hesitates. I shall state two examples that have come under my own view.

On the 19th March, 1824, I went to Bishop Burton, near Beverley, to measure an old elm growing in the middle of the village, which had often struck me as of extraordinary size.

Its dimensions are—

Circumference at the base, 44 F. or 14 F. diameter.

" 5 F. above ground, $31\frac{1}{2}$ F. or $10\frac{1}{2}$ F. diameter.

It has yet very large branches and leafs vigorously.

There used to stand in the village of Bourne, near Howden, an oak, the heart of which was gone, and the capacity of the inside was so large, that the farmers used to put ploughs and harrows in it in winter. It would hold twenty men. At 5 feet above ground, it measured 36 feet circumference. It was called Bourne chapel; and myself when a boy (55 years ago) have taken shelter in it. It is now cut down and cleared away. Mr. Joseph Thompson, of the Welbeck* Gardens, near Ollerton, in answer to some queries I put to him in March, 1824, respecting the famous Green Dale Oak, in Welbeck-lane, which it appears is in great decay, mentions two large oaks in Welbeck Park, called the *Porters*—(from a gate being placed between them.)

* A seat of his Grace the Duke of Portland.

No. 1—Circumference at base—38 feet
3 feet—27
6 ——-23
15 -——20 7
25 -——19 7
35 ——-18 6
45 -——13 2
55 ——-10 2
} Height 96 feet. Some of the Branches 36—43 feet.

Solid contents 840 feet.

No. 2—Circumference at base—34 feet
3 feet—23 —
6 ——-20 —
} Height 88 feet.

Solid Contents 744 feet.

External Characters.

The external characters of plants (of which only I at present speak) are extremely multifarious, and appear to baffle our conceptions, till we have some clear notions of their original typification; for evidently the same types are of frequent occurrence, and the same forms and figures by them constituted are distributed to individuals of the various families and genera. From the accompanying recurrence of these types, distributions of plants have been made in aggregates, according to the depth of view of the many writers on classification.

The question still is, whether there is in nature, supposing all the proximate species to stand together, a concatination; or whether, if they were so arranged, there would be abrupt gaps dividing the species into aggregates or families?

This question will probably never be clearly determined, for nothing less than the whole species arranged concatinatedly (a matter not ever presentable to our view or understanding) can supply the desideratum. It appears to me, that nature is neither concatinous nor aggregate, but typical, and that pursuing these types as primaries, any numbers of systems can be created. Adanson has specified 65 systems.

Myriads of types constituting forms and figures are clearly apparent, and have been distributed into the constituent parts of plants, for purposes, in many cases, to us incomprehensible. From the recurrence of one or more of these types, the numerous subjects of the vegetable kingdom are, however, collectable into some striking groups or affinities, which exceedingly serve the purposes of science, and by their aid the mass is divided into classes, families, genera, species and varieties, varying as to the particular view of each student: yet these are probably still not true natural groups or families, but aggregates

selected from the recurrence of *joint* types, as striking the genius of the writer, but which will always produce a variety of families, in proportion to the number of parts selected to form such groups or series.

Jussieu seems a concatinist, by stating the approximating or receding particulars of his families, while Decandolle and others give a more artificial location to their groups.

Much charge yet operates with the votaries of a natural arrangement, and probably will continue till they fix on the essential parts that shall exclusively enter into their arrangements, as Linneas did with respect to genera.

For any one the least conversant with numbers must be sensible of the latitude that would be created, if the six parts constituting the fructification, according to Linneas, were increased even only to seven; and if any system is to be aided by any number of parts, such system must of course be capable of infinite variety and incertitude: indeed the bases of the system of Jussieu are entirely artificial, and the distribution and essential parts of the orders extremely indefinite.

In the study of plants, numeric progression, ascending and descending, arithmetic and geometric, are strikingly apparent, particularly in the parts of fructification, 3, 6, 9, and 12, and 2, 4, 8, 16, and 5, 10, 20, are often corresponding enumerations of the different parts of the same plant, with surprisingly few exceptions, which every one conversant with the investigation of plants, perceives with considerable astonishment.

Review of the principal Works particularly with respect to Trees and Shrubs that will vegetate in the open air through the winter, in Middle and Northern Europe.

English.—EVELYN.

We are rather deficient on the subject, and the work of Evelyn was long the standard. It tended to demonstrate the national necessity and expediency of raising timber trees, and diffused a taste for planting and rural scenery in Britain, and we are probably, in a great degree, indebted to his writings for the many parks and some of the factitious scenery which form so striking a feature in the aspect of our Island. The British parks are the standard of beauty on the continent, and modern foreign writers on landscape gardening yet refer to them as the best models on the subject.

Estimating the work of Evelyn by the present state of botanic science, the defective manner of its composition, and the paucity of its materials are soon apparent: the numerous superstitious legends from early writers detract also from its intrinsic merit. There were five editions of the Sylva.

MILLER.

The sciences of botany and horticulture advanced rapidly in Britain from the influence of the able, practical writings of Miller. His works have been translated into German and French, and yet continue to be highly esteemed.

His principal work, the Gardener's Dictionary, went through eight editions, the last in 1768 was enriched with the Linnean, trivial names.

New edition of EVELYN.

Influenced by the writings of Miller, a new edition of Evelyn was wanted, and it would have been fortunate for science if this had been undertaken by the former, and received his experienced and amplified remarks.

The work was at length completed by the late eminent Dr. Hunter, of York, who augmented the Sylva to two quartos, illustrated with thirty-four plates of trees by J. Miller, at that time the most celebrated botanic draftsman in England. It is a pity the doctor did not, considering the excellent materials of Linneus and others then extant, compile an entirely new systematic work, without shackling himself with the text of Evelyn.

There are three editions of the Sylva, by Hunter, the last in 1812.

How far Dr. Hunter has satisfied the scientific public, I shall not pretend to say: his confessions in the preface are not very flattering to the expectations of the botanist.

HANBURY.

The ponderous work of Hanbury, in two volumes folio, contains little novelty, in a botanic view. The details on cultivation may have some merit. It is a pity he did not adopt the happy double name of Linneus; but what shall we say when the still more luminous mind of the great HALLER, who must have been very conscious of its great utility, would not use it in his great work on Swiss plants.

French.—DUHAMEL.

The French were fortunate in the able Duhamel, whose observations will always enrich the natural sciences. His great work, Traité des Arbres et Arbustes, appeared in two vols. 4to. in 1755. He sparingly adopts the language and definitions of Linneus.

DUHAMEL, Nov.

Traité des Arbres et Arbustes, que l'on cultive en France en pleine terre. Second edition, seven vols. folio!

The plates by Redouté and others. The very dark shading precludes the vivid tints of nature, when coloured. Many of the most common subjects, and some without flower or fruit are figured.

Some greenhouse kinds are inserted and numerous varieties of eatable fruits, which the original Duhamel, more properly, included in a distinct work.

REDOUTÉ.

Les Roses, en 30 livraisons.

He seems to have succeeded the best of any person in the delineation of the species of this beautiful genus, by giving the appearance of that delicate thinness to the petals which most others have managed with so little success.

German.—J. P. DU ROI.

Harbkesche Wilde Baumzucht, 2—8o. 1771—2.

A work of considerable merit, and a useful manual as far as its materials extend.

C. L. WILLDENOW.

Berlinische Baumzucht. Second edition, in one close printed vol. in 8vo.—Berlin, 1811.

It was reserved for the masterly hand of the experienced Willdenow, to present us the best book on Trees and Shrubs, but limited to those that grew in the open air, in the Berlin Botanic Garden, and that would bear the severe winters usual in that country, in which the enumeration is however, very short of that

of the British catalogues, enriched by our very extensive foreign connexions, and introduced from North America and the temperate zones of Europe and Asia.

The number is still farther increasing in Britain, from the high stations of even tropic countries, whose acclimatation in this Island was formerly thought impossible.

Willdenow's great skill in botany, aided by the proximate advantage of a fine botanic establishment (institution,) enabled him to watch the floration and development of all the parts from nature.

In this very useful work, a plain description of each plant is given from the living subject, as far as it had developed itself in the Berlin Botanic Garden, at the time of publication in 1811 (for many of the trees, in particular, were young, and had not then flowered.) The descriptions are on strict Linnean principles, to which the author steadily adhered in all his botanic works, taking the parts of the plant in each description in the same order, and not in the often vague, slovenly and reiterated way of many botanic writers, for want of writing them on printed formulä, and so preserving the same sequencial order of the parts.

Delineations. (Icones.)

Some works aim more especially at delineated illustrations. The undermentioned (including the before cited new Duhamel) are the principal:—

German. FRANTZ SCHMIDT.

Österreiches Allgemeine Baumzucht, small folio.

Band 1 & 2, t. 1—120—Wien. 1792.
3, t. 121—180— —— 1800.

This is a very good and useful work, as far as it extends; but the colouring is often too glaring and unnatural. Costs, to import, about £10.

WILLDENOW AND HAYNE.

Abbildurg der Deutschen Holzarten. (Trees and shrubs, natives of Germany, from the North and East Seas to the High Alps, and from the Rhine to the Vistula.)

In 36 Nos. 4to. Berlin, 1810—1820. This work contains 216 coloured plates, generally well executed, but the colouring often too weak, and too much sameness in the greens. Charged by the German booksellers, in London, about £16.

French—ANDRÉ MICHAUX.

Histoire des Chènes de l'Amerique. 1-folio. Paris, 1801.

A very excellent and highly useful monograph of American Oaks, with 36 good plates.

F. A. MICHAUX, (SON OF THE ABOVE.)

Histoire des Arbres Forestiers de l'Amerique Septentrionale, tom. 3 en 8o. Paris, 1810—1812.

There is an English (American) translation, entitled the "American Sylva," of this very useful work, published at Paris in 1817, in 7 parts, 8o. which includes the oaks of the father's monograph, with 156 good plates. May be had at 12 guineas coloured, or 9 guineas plain.

English—AYLMER BOURKE LAMBERT.

A description of the Genus Pinus in folio. London, 1803.

This valuable and splendid work contains 43 plates, (including Dombeya 2, Dacridium and Cupressus 2,) and some additional plates are now publishing.

A royal 8vo. edition of this work would be gratefully received by the botanic public.

English Periodic Works—J. E. SMITH & J. SOWERBY.

English Botany, 36 vols. 8vo. London, 1790. .....

This very extensive, useful and indispensable work to the indigenous botanist, is illustrated with 2592! coloured plates, all natives of Britain, and includes about 100 Trees and Shrubs for the Dendrologist, indigenous to the British Isles. Though the forest trees are only about 30, (how few compared with the rich forests of North America!) costs £55 6*s*. 6*d*.

H. ANDREWS.

The Botanist's Repository for new and rare plants, 10 vols. 4to. London, 1797.

Contains 664 coloured plates, and is generally devoted to plants from hot climates. A few, showy, hardy shrubs are amongst the number. Costs £30.

CURTIS & SIMS.

Botanical Magazine.

Begun by the late Mr. Curtis in 1801, and continued to and at the present period (1st Nov. 1824.) by Dr. Sims, contains 2530 coloured plates of plants that have flowered in the British gardens, and is the most extensive and useful botanic work extant in any language. It contains a good many figures, of the showy American bog shrubs. Costs £63 3*s*. 6*d*.

KER.

Botanical Register. Contains (1st Nov. 1824) 846 coloured plates of plants that have flowered in the British gardens; still continues and is also a valuable work. Costs £23 8*s*.

It is a pity these two last mentioned works should not, as much as possible, keep clear of each other, as to the subjects published.

C. LODDIGES AND SONS.

Botanical Cabinet. Ninety-One parts, each containing 10 plates (910 plates) are now (1st Nov. 1824) published.

There are two editions of this very useful work, one in 4to. with the plates, wholly coloured, price 5s. each part, and one in 8vo. with a flower and part of the plant coloured, at 2s. 6d. each number. I consider this latter economic plan very good, and I hope it will be imitated by others. It is equally useful to the botanist, as the wholly coloured copy, and at half price, a weighty consideration.

Cost of the 4to. edition, £22 15*s*.—of the 8vo. edition, £11 7*s*. 6*d*.

Few persons (if any) possess the advantages these gentleman do for the publication of such a work—one of the finest sale-establishments of plants, constantly under their own inspection and management.

The application of steam to heat their very extensive plant-glass-houses, is highly interesting. The ground for hardy trees and shrubs is very capacious, and is laid out in thirteen concentric circular borders, with gravel and grass-walks between them, and the plants are in one continued alphabetic, named series (except the beautiful American peat shrubs, which occupy the nine middle circles, and require to be cultivated in heath-mold) Indeed the whole establishment is very extensive and particularly complete and curious.

These gentlemen also publish, from time to time, a very useful catalogue, containing only what plants they *really possess* at the period of its publication.

With the above cited expensive materials, even the Dendrologic department of botany (Hardy Trees and Shrubs) is at present necessarily connected, and they form an indispensable part of the apparatus of the student, not to mention many other very voluminous and expensive works, in which particular objects are dispersed, and to which the botanist, in any department, must have frequent reference. In the extensive scale of botanic pursuits, departmental publications, from the considerations just adduced, must be highly useful, as Hardy Trees and Shrubs, hardy herbacean plants, green-house and stove plants, or even particular natural orders, as Liliaceä, Gramineä, &c. or monographs of single genera, as each separately have often their particular admirers, who cannot buy all the books extant, and no life or genius is equal, in a particular and detailed way, to embrace the whole now discovered vegetable system.

These considerations influenced the author to attempt a distinct work on hardy trees and shrubs, on a uniform plan, and he has selected those that had not been done by British botanists, of recent date, in the 172 plates now published. The encouragement this selection may meet with will necessarily determine the farther progress of the work, without reference to miscellaneous extant publications.

The merit of the execution of the work must be left to the candour of the scientific public, who are alone capable of appreciating the difficulties of such an undertaking. The author begs to add that the descriptions and drawings were all made from the same living object, (individual) a necessary precaution to prevent the errors unavoidable from compilation. The dissections were made under his own superintendence.

Observations on some particular Genera.

I have made few alterations to the usual, established genera.

Planera I have considered as distinct from Ulmus, from its bearing a capsule (not a samara.)

Lyonia as distinguished from Andromeda, by its muticate anthers and Carya from Juglans, from its very different male aments and flowers.

Spartium I have merged into Genista, after the example of the French.

Oxycoccos I have (after Pursh) separated from Vaccinium as bearing only eight stamens.

Cydonia, Malus and Sorbus, I include in Pyrus, having the spermoderm (seed-coat) Cartilaginous and Cratägus I have merged into Mespilus, from the seed being contained in Pyrenes.

THANKS.

My thanks are particularly due to W. T. Aiton, Esq. of Kew, for permission to inspect and take specimens from the fine Arboretum there.

— To Aylmer Bourke Lambert, Esq. for permission to use his very extensive library and herbarium.

— To Robert Brown, Esq. for the like permission to inspect the Banksian library and herbarium.

— To Mr. William Anderson, principal gardener to the Apothecaries Company's Physic Garden, Chelsea.

— To the following Gentlemen, (I put their names alphabetically to avoid the appearance of preference) for their great liberality in permitting me freely to inspect their respective, extensive, and valuable sale-collections of plants.

Messrs. Colvil & Son, King's Road, Chelsea.
Mr. Hill, Leytenstone.
Mr. T. Jenkins, Botanic Garden, New Road and Regent's Park.
Mr. Knight, Exotic Nursery, King's Road, Chelsea.
Mr. James Lee, Hammersmith.
Messrs. C. Loddiges & Sons, Hackney.
Messrs. Malcolm & Co. Kensington.
Mr. Rollisson, Upper Tooting.
Messrs. Rollisson & Son, Brentford.
Messrs. Whitley, Brames & Milne, Fulham.

I have also reaped advantage from inspecting the fine Trees (introduced by Catesby, Miller, Collison and others) in various private gardens in the Parish of Fulham, and particularly those of the Bishop of London and Mrs. Simpson's (late Ord's) Purser's Cross, Walham Green; which last, in particular, contains many noble specimens of Forest Trees.

HULL BOTANIC GARDEN.

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* *Respecting the Garden itself.*

As I am a native of Hull, and have lived there and in its vicinity the greatest part of my life (64 years) the establishing a Botanic Garden at my birth-place, in the year 1812, was to me, as I had previously devoted myself to British Botany, a very pleasant circumstance, and I took a lively interest in its formation and subsequent improvement.

Origin.

The Institution has certainly to thank its origin and means of formation from the very great exertions of J. C. PARKER, Esq. an ardent lover of botany, and without whose efforts, though many other persons favoured the scheme, I am pretty certain subscriptions would not then have been raised adequate to the cost of such an establishment on any respectable scale.

Extent and First Cost.

The Garden contains five acres of ground, to purchase which, with the expense of making gravel walks, hot-houses, (the central green-house is 40 F. long, one wing, the stove 30 F., the other wing 30 F. long is now to be built to make the range 100 F. long,) walls, lodges, cost of the first trees and other plants, &c. &c. amounted in Oct. 1816, to £4470.

Means.—Number of Shareholders and Subscribers.

The number of Shares sold up to this time (1st November, 1824) is 498, (213 at Five Guineas and 285 at Six Pounds each Share) and the number of Subscribers at One Guinea and Half ℔ Annum is 277, and 7 at Two Guineas ℔ Annum, which, for a trading town of 30,000 inhabitants, may be considered respectable, though by no means adequate to the expense of an extensive establishment of its nature. It was hoped, donations would have come in from the opulent, but except the single one from Francis Constable, Esq. of £21. and £1. 12*s*. 9*d*. anonymous, nothing more has been received in this way!

Circumstances at its Formation, and first Stock.

Circumstances were rather favourable to the Institution at its commencement, and for a few years afterwards.

Soon after the formation of the Garden, the extensive nursery-stock of the late JOHN PHILLIPSON, of Cottingham (one of the best cultivators in England) was disposed of, and the Garden had the choice of that collection at a reasonable rate: this, aided by a few purchases from the rich London nurseries, the plants procured by Mr. DONN, the Curator, from his uncle, the late Mr. JAMES DONN, of Cambridge, and his exertions amongst others friendly to the institution, made a respectable beginning.

I hope I shall not be considered vain in adding my own endeavours to furnish the institution with many indigenous plants, which I collected at considerable expense and labour, by traversing the whole East Riding of Yorkshire, in my gig, with proper apparatus for cutting up roots, collecting seeds, &c. of the rarer sorts, whose habitats had been rendered familiar to me from numerous, previous herborisations.

Progress.

Thus favourably circumstanced, the Garden increased rapidly the first three or four years, and bid fair to possess those scientific features which constitute the real intrinsic value of such an establishment, and it was certainly much richer in the fourth year than it at present is, at any rate, in the more useful, hardy department.

Since that time, I am sorry to add, it has not made that progress to justify the expectations of the scientific botanist, or kept pace with early flattering hopes.

Spacing.

The principal catalogues of plants, esteemed hardy to Britain, were consolidated, and a square of 3 ⅌ 2½ F. was allotted for each perennial plant, to leave room for all expected acquisitions, and each space had a named label-stake.

Arrangement.

The first arrangement of the perennial quarters, was made after the valuable and elegant synopsis of PERSOON, and each generic label-stick was paged, to facilitate immediate reference to that work, so that *those that run might read.* The

beds were 2½ F. wide, with allies of 1½ F. between them, and contained 22 plants each, and had number-stakes, to be referred to on a plan of the Garden which was intended to be made and hung up in the Committee-room.

This arrangement, though very good, and perhaps the best, as it followed the order of PERSOON's species, was afterwards annulled by the committee, and the whole ground laid out after the certainly more enlightened system of JUSSIEU, as to genera, and was no doubt, excepting that at Kew, the most Complete scheme in the kingdom. It fell to my lot to execute these two arrangements, and an arduous task it was; and, had I foreseen what would follow, I might have been excused from that trouble, as the arrangement is now altered to that of Mr. DONN's catalogue! which, though good as a catalogue, cannot pretend to the scientific correctness of the two other mentioned great works, in which are the accompanying characters—for what is a list of bare names?—by which (present) arrangement, the Garden has lost that classic feature so essential to a public, botanic institution.

Persons assisting in its formation.

A. H. Haworth, Esq. so well known from his various publications in natural history, then lived at Cottingham, (a village five miles from Hull, where I now reside.)———William Spence, Esq. joint author with the Rev. W. Kirby, of Barham, in Suffolk, in their great work "Introduction to Entomology," and sole author of several other smaller works, then lived at Hull, and also myself.

We three joined our active exertions with those of Mr. PARKER, in forwarding the intentions requisite to such an institution. To these must be added the exertions of Mr. William Donn, the present Curator, who has managed the Garden from its first establishment.

The two first gentlemen, Mr. HAWORTH and Mr. SPENCE, left Hull some years ago, and I myself have been absent from it the last seven or eight summers, and the Garden I may presume to say, lost the vigilance of some of its warmest supporters. I shall not pretend to say how far the institution has suffered from these circumstances. The Garden has always been under active and well intentioned Committees, but such establishments want something more—they want these ardent, constant, and scientific attentions to give them a classic feature, and render them of importance to the sciences—which attentions are not to be expected but from persons devoted to botany.

Aspect.

It is certainly a handsome Garden, and is laid out much after the plan of that at Liverpool; the Committee had the assistance of Mr. JOHN SHEPHERD, the experienced Curator of that establishment, in laying it out, as far as respected its general feature.

Duty of Committees.

I strenuously recommend to Committees to keep a watchful eye to the scientific departments of the Garden, to see the plants are in a kind of geometric and scientific order, and in line, space, group, &c. (the Liverpool garden is excellent in this particular,) with appropriate neat labels to each, and with a zeal to fill up the blanks. Those who have ability to investigate and try the names, would confer an obligation on the Garden by pointing out any errors, so as to bring the Garden, at some period, to a classic perfection.

The keeping a garden neat, clean, and pretty, is a mere mechanic work, and should not be esteemed farther than its use.

** *Miscellaneous Observations.*

Extent and Use of the Science of Botany.

BOTANY is in a far different state from what it was, when few else but European plants were known, and these very imperfectly—it has assumed a philosophic feature—perhaps 50,000 plants are scientifically described, and the number is fast increasing by the communications of bold and scientific travellers, penetrating South America, in particular, in all directions, and exploring other regions, for the sole purpose of extending the natural sciences.

It may easily be perceived what extent of intellect must be required to characterise, class and arrange the half of these, added to the attendant extensive nomenclature, so that botany or any branch of natural history, may fairly have the title of a philosophic study.

The student might reasonably be alarmed at this extensive enumeration, if his fears were not, in some measure, alleviated by the consideration that an immense extent of country must be traversed to furnish 3—4,000 distinct species.

Natural history is now an indispensable part of a traveller's education, to bring us to a close acquaintance with the valuable products of foreign countries, the

origins of which are yet, in many cases, unknown. What are the numerous details of most travellers, of what they ate, or what they drank, to the luminous observations and enlightened researches of some few others, who had previously qualified themselves by studying astronomy, geography, and natural history.

The scientific adventurer must be pre-educated on the bases of THUNBERG, MICHAUX, BROWN, HUMBOLDT and BONPLAND, BUCHANAN, SPIX and MARTIUS, &c. and it is the special business of scientific institutions to furnish the preliminary necessaries to such enlightened adventurous travellers.

I am sorry to observe, that as far as my knowledge goes, the Hull Garden has not yet elicited one botanic genius. Will none of my trade-adventurous townsmen scan the Andes or Himmalas, or traverse the extensive plains of Tartary? Our neighbouring place, Marton, gave birth to the scientific, intrepid and immortal navigator, Cook. Will Hull not one day furnish a Humboldt, Michaux, Thunberg, Brown, or a Buchanan?

Continental Gardens.

The principal continental gardens, such as Paris, Vienna, Berlin, &c. by being under the direction of professors, who are in some measure accountable to the public for the accuracy of the names, have, to the student, far the advantage over ours, though they may be deficient in many of the Tropic, Cape, and Australasian species—for what are hosts of plants to live and die without name, register, or use? The mere sight can be gratified at much lighter expense from ornamental borders, containing about a dozen sorts of the most strikingly gaudy species; but to the naturalist, the most insignificant are of equal value as forming a link in the great chain of nature.

Present Committee for managing the Hull Botanic Garden.

(1st November, 1824.)

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Benjamin Snowden, Esq. Secretary.

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J. C. Parker, Esq.
J. K. Watson, Esq.
P. W. Watson, F.L.S.

Mr. William Donn, Curator.

Note to bottom of Page 12.

The stove (west wing) was erected by the aid of voluntary subscriptions, amounting to £99. 18*s*. 6*d*. from 70 Proprietors, out of the then whole number of 300 Proprietors.

CARPOLOGY.

As the arrangement of plants after the natural orders of Jussieu is now pretty generally attended to, with such alterations as more extended science has introduced since the publication of his great work, Genera Plantarum, in 8o. 1789, (an edition also by Uster, in 1791) it becomes necessary to the botanist to be acquainted with many terms and definitions which have been introduced (principally by French writers) in designating those important parts—fruits and seeds; for no genus, even, can properly be constructed without adding the characters of the fruit.

Some elucidation of these new terms is the more necessary as they are now insinuating themselves into most recent botanic works (for science is slow and unwilling to be farther burthened) and particularly in those luminous works of the able Decandolle, which are now become the classic standard, as those of Linneus and Willdenow were before.

Extensive collections of fruits and seeds are made by principal botanists, to subserve the purposes of their studies, and a fine well stored cabinet is exhibited at the Museum at Paris.

The study of fruits and seeds is by far the most difficult part of Botany, and we have not much in the English language illustrative of the subject, except J. Lindley, Esq.'s Translation of L. C. Richard's Observations on Fruits and Seeds. London, 1819.*

This work, however, is more particularly restricted to the seed and its contents, than to fruits. As it is in every person's hands who make a study of this part of botany, I do not generally quote it, but confine myself to the elegant introductory works of Mirbel, Gerard, Desvaux, Richard and Decandolle,† as far superior to any thing we possess in our language.

* There is also a German translation of Richard's work, by F. S. Voigt. 1811.

† 1. Brisseau—Mirbel – (C. F.) Elemens de Physiologie et de Botanique. 1815. Two vols, 8vo. with 72 plates.

The many introductions we have in English, are almost wholly from Linneus, without the additions that have enriched science since the time of that great man.

Dr. Hull, in his Elements of Botany, has done great service to the English reader, by translating some useful papers, and particularly the luminous introduction of Gärtner to his immortal work "De Fructibus et Seminibus Plantarum, in 3 vols. 4to. with 225 plates."

This is the first botanic work of its kind, extant, and is indispensable in the study of fruits and seeds. The very numerous figures it contains are neatly executed but in many instances on too minute a scale, and the situation of the seed, with respect to the axis of the pericarp and the contents of the seed, as they correspond with the hile, are often obscure on merely inspecting the figures. The direction of the radicle, with respect to these two parts, so important a consideration, is also often obscure. But posterity must improve on him, who has done so much.

A new Introduction to Botany, in our language, is still a desideratum, incorporating the whole of the French botanic introductions above-mentioned, and also many observations from the late numerous useful German and English writers on botany. It should be in four columns—Latin, French, English and German, and be compiled by an able, scientific botanist, well acquainted with the relative botanic force of expression in these langnages, and not by a merely literary man from the language of conversation.

Science ought to be clothed with its own distinct and definite terms, and not with vague, vernacular expressions, as is too frequently done.

I shall also notice the receptacle of the fruit and the disk, (phoron or bearer) an important part which occasionally is present, supporting all or some of the parts of the fructification, and which has not hitherto been sufficiently attended to.

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2. Gerardin (Sebastien) Dictionnaire raisonné de Botanique. 1817. One vol. 8vo.

Published by N. A. Desvaux, with a Supplement.

N. This work being unfortunately alphabetic, the very worst of arrangements for scientific subjects, precludes, by its scattered articles, the use it otherwise would have bestowed by its, no doubt, valuable contents.

3. Desvaux. (N. A.) Programme et Nomologie. 1817. One small 8vo.

4. Richard (Achille) Nouveaux Elemens de Botanique. 1819. With 8 plates.

(N. There is a second edition since.)

5. Decandolle (A. P.) Theorie Elementaire de la Botanique. 1819. Second edition.

Before I attempt to characterize the pericarp in the Carpologic Concordance, it will be necessary to identify at some length, the nature of the pistil or ♀ organ, either as an aggregate or as consisting of three parts, style, stigma and ovary, which last becomes the fruit, and contains its essential organization; and also consider the constituent parts of the pericarp and seed, in order to have clear notions of the language used in natural arrangements, but more particularly in Carpology.

NOMENCLATURAL CONSPECTUS.

* *Accessory organs situated in flowers, not genital organs or teguments, but supporters (bearers) or appendages of one or other of them.*

1. Receptaculum.....receptacle.....
   Torus. Salisb......
   Sedes flores. Grew..
   Clinium. Greek....
   Thalamus. Latin..
   thalamiflorus .....sexual organs fixed to receptacle.

2. Phoron.....bearer.....
   Discus.
   1..anthophorum.....bears a flower or flowers.
   monanthophorum P.W.W..
   polyanthophorum „ ..
   2..gonophorum.....bears the genitalia.
   gynandrophoron. P.W.W..
   3..androphoron. „ .....bears the stamens.
   4..gynopheron. „ .....bears the pistil.
   carpophorum. Lk.....
   thecaphorum. Ehr.....
   basigynum. R.....
   5..polyphorum. R.....bears several pistils.
   polygynophoron. P.W.W..

Parastyle. Lk.....abortive pistils.
Paracarpium. Lk..... „ pericarps.
Lepisma.....scales.....at base of some ovaries.
Sarcoma. Lk.....glands of anthers.
Urceolus. Lk.....vesicle.....surrounding the ovary in carex.
3. Glandulä.....(ovarianä).....ovarian glands....

** *Essential Organs.*

4. Sexus.....sex.....
   1..femineus..... ♀ ..female.....
   gynos. Greek.....
   2..mas.....♂ ..male .....
   masculus.....

— masculinus ..... masculine.....
ander. Greek.....
sexualis.....sexual .....
— unisexualis.....uni „ .....only one sex in the flower.
— bisexualis.....bi „ .....both sexes in the flower.
neuter.....having no sexual organs.
agenius. Lameth.....
agamus. R .....
androgynus.....male and female organs without designation of position.
hermaphroditus.....both sexes united in the same flower.
idiogynus.....having no female organ.
monogamicus.....flowers separate and distinct.
monoicus.....male and female flowers separated, but yet on same plant.
dioicus ..... „ „ „ on two distinct plants.
trioicus.....male, female, and bisexual on three distinct plants.
polygamus..... „ „ „ on the same or on distinct plants.
fertiles.....fertile.....
steriles.....sterile.....

Genitalia.....
Gonoi. Greek.....

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5. Pistillum.....pistil .....
Gynè. Greek.....
Gynos. „ .....

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6. Stylus.....style.....
tuba vail. Hal .....

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7. Stigma.....stigma.....
vulva vegetabitium. L. (sometimes.)
cornuta. Jung.....stigma-branches..
gynzius. R.....humid and viscous area of the stigma of orchideä.
postellum. R.....prolongation of the stigma which covers the gynzius.
corda pistillaris. Corr.....pistillary cords.....conducting the aura seminalis.
stylesius. Lk.....

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8. Ovarium.....ovary.....transformed into the pericarp.
1..simplex..... .....simple..... ..
2..divisum.....divided.....
germes. Lk..... .....
gynobasis. D.C.. .....
3..multiplex.....multiple.....

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9. Fructus	fruit	fecundated ovary.
Carpon. Gr. 1. simplices	simple	from a single ovary.
2. multiplices	multiple	from several ovaries, but only one flower.
carpellum. D. C.		
chorion. M.		
3. aggregati	aggregate	from several ovaries each having had a flower.
carpidium. D. C.		
heterocarpinus. D.	heterocarpian	ovary developing with some other part modifying its form.
pseudocarpinus. D.	pseudocarpian	the true fruit hid by the surrounding parts, which latter appear to constitute the fruit itself.
gymnocarpes. M.	uncovered	
angiocarpes. M.	covered	

Induviæ	tegments	
florales. Corr	floral teguments	persisting and accompanying the flower.
—induviatus	tegmented	

10. Pericarpium	pericarp	
Conceptaculum		
Seminum. Jung		*(who reserves the pericarp for a dry, indehiscent one!*
Med.		
1. epicarpium. R.	outer skin	pannexterne and panninterne. M.
2. sarcocarpium. R. *caro.*	mid-flesh	pannexterne and panninterne. M.
3. endocarpium. R.	inner skin	pannexterne and panninterne. M.

(Exterior parts or appendages.)*

alä	wings
corona	crown
pappus	pappus
cauda	tail
valvulä	valves
valvä	
valvatus	valved
valvaceus. Lk.	
sutura	suture

(* Interior Parts.)*

dissepimentum	partition	
lignum intergerimum. Breyn.		
distinctio. Breyn.		
1. longitudinales	longitudinal	
septum. Lk.		
2. transversales	transverse	
phragma. Lk.		
3. valvares	valvular	formed by the edges of the entering valves.
valves intraflexis.		
—false valves. 4. medivalves. M.	middle-valved	going from middle of valves to the axis.
—false valves. 5. cellulares. M.	cellular	a simple lump of cellular tissue.
Loculi	cells	
loculamenta.		

thecä. Br.

locularis ..... celled.....
2, &c. „ ..... 2, &c. celled.....

Coccum .....

3, &c. coccei ..... 3, &c. coccous ....

pulpa ..... pulp ..... of cells (not of pericarp.)

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11 Placenta ..... placenta .....
Trophospermium. R.
Spermophorus. Lk.
Colum. Salisb.
Receptaculum seminum. Neck.

placentarium. M. ..... placentary ..... union of placentas.
placentatio ..... placentation .... method of fixation of seed to placenta, (pericarp.)
retinacula..... holders..... hooks from the placenta to hold the seed, not support it.

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12. Funiculus ..... funicle ..... sheath to the vessels that unite seed to ovary.
podospermium. R.

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13. Arillus ..... aril ..... mace in nutmeg, parchment in coffee.

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14. Pellicula. D. C. ..... pellicle ..... a very thin membrane entirely enveloping some seeds and bearing hairs. (Gossypium.)
epidermis. G.

Coma..... hair-tuft..... at end of some seeds.

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15. Ovula ..... ovules..... rudiments of the seed before fecundation.
Ova.

15*Semen ..... seed .....
Spermum. Greek.

Exterior appendages of Seeds.

pterigium ..... wing.....
strophiolä..... strophioles ..... hunches on some seeds.

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16. Spermodermis. D.C..... seed-coat.....
perisperm. R. in Annal.
episperm. R. in Mem.

1. testa ..... outer-coat .....
lorica. M.
2. Sarcodermis..... mid-flesh (mid-coat)
parenchym.
3. endopleura D. C. ..... inner coat .....
tunica interior. G.
hiloferus. M.
tegmen. M.

17. Cicatricula. D. C.
Hylus ....pile .....
Hylum.
Umbilicus.
Fenestra.
1. omphalodium. Turp. .....omphalode .....
2. micropyla. Turp.....micropyle .....
foramen. Grew.
Spilus. R.....spile .....hyle of Gramineä.

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18. Prostypum. M. .....prostype .....
1. rapha .....raphe .....
2. chalaza .....chalaza.....

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19. Nucleus..... .....kernel.....

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20. Albumen .. ....Grew. G.... .....(egg-white).....
Secundinä internä. Malp.
Medula semenis. Jung.
*Perispermum. Jus.....*perisperm.....
Endospermum. R.
Chorion .....Malp.
Amnios .....Malp ... .
Vitellus .....G..... ....(egg-yolk.).....imaginary being.
a. Bacillus. Lk.....
b. Blastus. R. .....
c. Blastophorus. R. ..... } supposed parts of the
d. Epiblastus. R. ..... } vitellus of Gä.
e. Rhiziophysis. M. .....

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21. Embryo..... ....embryo... .....in upper part of amnios.
Corculum.....
Cor seminis. Jung.
macropodius. R.....
macrocephalus. R.....
endorhizus. R. .....
exorhizus. R. .....
synorhizus. R.... .....

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22. Plumula..... ....plumule.....
Gemma. R.....
coleoptila. M.....plumule-sheath..
coleoptile. R.....
1..cauliculus. .....tigel.....unites radicle to cotyledons.
2..gemmula..... ... .plant—bud.....first bud and above the cotyledons.

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23. Radicula..... .....radicle.....
Rostellum. L....
radicella. R.....rudiment of a radicle.
coleorhiza. M.....radicle-sheath....

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24. Cotyledones.....cotyledons.....
Lobi. Grew.....

Valvi seminum. Jung.	
corpus cotyledoneum.....	cotyledonous mass..cotyledons in their united state.
main body. Grew.....	
synzygia. R.....	point of junction when opposite.
lobuli. M.....	when alternate, it is the upper one.
racines seminales. Fr.....	seminal roots.....vessels passing from plumule into cotyledons
25.....	Vascular system.

Dilated particulars of the most important parts enumerated in the above Conspectus.

1. RECEPTACULUM, (not Phoron) point (or apex) of peduncle and generally an excavation of it, from which arise all the parts that compose the flower.

Bears the flower and fruit (stamens, staminiferous, coral, and ovary.)

Space between point of junction of ovary and calyx.

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2. PHORON, PHORUM, (bearer) improperly considered as synonymous with receptacle.

A fleshy protuberance

A foreign body.

When the ovary is free it sits on its apex, or by a parietal protuberance at orifice of tube of calyx.

—— *continuous*—equal to size of base of ovary, but different in colour.

—— *distinct*—projecting rings, angles, eminences, sinuosities, or concavities, to receive the ovary when it is free.

—— *Anthophorum*—bears the flower and its compositive parts.

A particular prolongation of receptacle and arising from bottom of calyx.

—— *Gonophorum*—prolongation of receptacle bearing the genitalia.

—— *Androphorum*—bearing the stamens.

—— *Gynophorum*—arising from receptacle and bearing the pistil (ovary) only.

Bears the pistil though not a part of it.

Does not essentially belong to the pistil, but remains at the bottom of the flower, when this latter falls off.

Oft becomes thick and fleshy (Rubus, Fragaria) when there are several pistils in one flower.

Simply articulated with the pistil, so that the 2 faces are not continuous.

Often separates from the pistil and remains fixed on the receptacle, of which it is a particular development.

Sometimes confounded with glands (nectaries) that distil the melliferous juices of flowers.

Conic, cylindric, hemispheric, &c.

— *Thecaphorum*—bearing a simple ovary.

— *Polyphorum*— ,, several ovaries.

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3. GLANDULÄ.. (ovarianä.)

Secretary.

Near the ovary but different in aspect and colour.

(Present.)

— When ovary is situate above a fleshy tubercle.

— When a projecting protuberance is seen on the top of an inferior ovary.

— When bottom (or tube) of calyx are covered with a fleshy, smooth substance distinct from the paries (in-coat.)

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4. SEXUS..

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5. PISTILLUM. a whole divided into 3 parts, style, stigma, and ovary, or an aggregate of similar organs coalesced.

The female organ situated in the centre of the flower, at the time the anther is charged with pollen or has just shed it.

Reposes on the receptacle.

Receives the vessels of the mother plant at its base.

Sometimes changes into petalloid laminä and becomes sterile.

One or several.

— *Podogynum*—foot of pistil and part of it.

Not continuation of receptacle, but of pistil (ovary.)

The tapering part of base of ovary elevating the pistil a little from the bottom of the flower.

Accompanies the pistil in all the stages of its development.

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6. STYLUS—prolongation of the ovary which supports it.

Supports the stigmas.

Sometimes only 1 from 2 ovaries.

Generally several surmount 1 ovary.

Linneus reckons as many female organs as there are styles.

Sometimes wanting or so short as to appear so.

Communicates mediately, or immediately with the ovary.

— *Immediately*—when it is basilar, lateral, or terminal.

— *Mediately*—when it rests on the receptacle or on a gynophore (not on ovary.)

7. STIGMA—the summet of the pistil.
A glandular part generally situated on top of ovary (or style.)
Terminates the style and receives the pollen (fecundating matter.)
Placed immediately on the ovary when the style is wanting.
Never absent.
Appears excoriated, or humid, or inequal and covered with papillä or small nipples.

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8. OVARIUM—the closed cavity in which the seeds are developed.
Generally the lower and thickest part of the pistil.
Contains the ovules (nascent unfecundated seeds) attached by their funicles to the paries (inferior cavity.)
Often divided into cells by partitions.
Shelters the seeds till their maturity.
Elaborates the nutritive juices, in its tissue, which serve for their development.
Its form various.
—— *Fecundation*—is as indispensable to the development of the ovary, as to that of the ovule.
The ovary whose stigma has not received the fecundating powder fades without increasing.
If fecundation has taken place the ovary increases, its paries (in-coat) produces numerous ramifications, and it often acquires dimensions and form very different to those it had first.
—— *Development*—before the flower opens and when the pistil begins to develope, the ovary is filled with a very delicate, cellular tissue, quite homogenous and whose transparent cells before the appearance of the ovules are infiltrated by a limped liquor.
—— *Simple*—when only one cell or when all the cells are agglutinated together.
—— *Divided*—when, having but 1 style, it is still composed of *several cells* not agglutinated, which are oft considered as distinct ovaries. (Labiatä.)
These cells adhere to the base of style which transmits fecundation to them.
The base of the style is often much swollen and is then called gynobase. (Ochna.)
—— *Multiplex*—when there are several distinct cells each provided with a style.
—— *Base*—the point by which it fixes to the receptacle.
—— *Apex*—always corresponds with the point where the styles or stigma are fixed on it. As this insertion is sometimes lateral, the organic apex of the ovary does not always correspond with the geometric apex.

(Comparative Position.)

— *Free*—generally so and at bottom of flower.

Base is fixed on that part of the receptacle where the stamens and floral envelopes are also inserted.

— *Inferior*—under the flower.

Embodied with tube of calyx, its apex only being free at the bottom of the flower.

Excludes multiplicity of pistils.

Necessitates a 1-sepaled calyx.

Sometimes it is not intirely inferior, but $\frac{1}{3}$, $\frac{1}{2}$, or $\frac{3}{4}$ is free.

— *Parietal*—when several pistils are fixed to the internal paries! of a closed calyx.

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9. FRUCTUS—the developed ovary inclosing the fecundated seeds.

Formed of the pericarp and the seed.

1. Simple. 2. Composed of carpels.

CARPELLUM—(partial pistil.)

Carpels are generally distinct.

Or are coalesced at base, middle, or as far as top.

Or are coalesced into a single fruit.

Some ovaries apparently single, but only several-celled, may be formed by the coalescence of several carpels.

Multilocular fruits only appear to differ from compound fruits, because the carpels are agglutinated in the former and distinct in the latter.

1-celled fruits often (if not all) arise from the abortion of some carpels.

In defining the number, the immature ovaries must be examined, as the most certain criterion of the natural number.

Carpels separate spontaneously at maturity.

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10. PERICARPIUM—every part of the fruit not seed.

That part of the ripe and perfect fruit formed by the coats of the fecundated ovary, containing 1 or more seeds, which it generally envelopes.

Always present, though it sometimes seems wanting.

Composed of 3 superposited parts—1. Epicarp.
2. Sarcocarp.
3. Endocarp.

— *Epicarpium*—the exterior thin membrane.

Sometimes formed by the tube of the calyx.

— *Sarcocarpium*—parenchymatous, fleshy and very thick in some fruits.

The vascular body of the pericarp, and composed of vessels that nourish the fruit.

Necessarily exists in all fruits.

Alone able to furnish nutrition to the seed.

—— *Endocarpium*—the interior semeniferous membrane.

Generally thin, but sometimes thickened by a part of the sarcocarp becoming osseous and a nut.

—— *Base.*

—— *Apex*—as it relates to the organization.

— As it relates to the mass, from whence the geometric apex is obtained.

Pericarpian Appendages.

* *External.*

—— *Alä*—thin crests or membranous laminä on the surface of some pericarps. (See Fruits Samara.)

—— *Corona*—the dried calyx crowning the *Pomaceä*, &c.

—— *Poppus*—calyx ? (partial) of Syngenesiä.

—— *Cauda*—the lengthened style covered with down (Clematis.)

—— *Valves*—pannels whose union composes most pericarps.

Parts of certain pericarps distinct, and capable of being separated at maturity, without tearing.

—— (true) symmetric sutures, indicating distinct pannels.

Generally all separate clearly at maturity (dehiscence.)

Fruits are considered to have no more valves than free pannels, but some are composed of two agglutinated inseparable valves.

—— *Sutura*—lines formed by the juxta-position of 2 valves.

** *Internal.*

—— *Dissepimentum*—diaphragms dividing the interior cavity of the pericarp into cells.

Some are produced by the entering margins of the valves (valvis introflexis.)

Some by a simple enlargement of the placentary.

Some by simple laminä of the cellular tissue.

A prolongation of the endocarp and sarcocarp, and generally membranous.

—— *Loculi*—empty spaces in the fruit destined to receive the seed formed by the alternate replications of the endocarp.

When the partitions are formed by the entering valves, each cell is circumscribed by 1 or 2 valves.

In the first case the valve is bent in length, and its 2 edges advance to gain the axis of the fruit.

— *Coccum*—a sort of cell opening at maturity by means of a membranous spring, situate at its base.
— *Columella*—real axis.
—— *Septifera*—bears the partitions after dehiscence whether the valves fall or are only disapproximated.

PULPA—the soft demiliquid matter in the inside of the cells covering the seeds.

PLACENTARIUM—union of placentas.
Part of the internal paries (endocarp) of the pericarp to which the seeds are fixed.
Essentially constituted by the conducting and nourishing vessels.

11. PLACENTA—agglutinated intimately with the endocarp.
The seeds are fixed to it by the funicle.
Originates from the sarcocarp, and has an immediate communication with it by an orifice or scar.
Developes itself in the centre of the pericarp like an axis, column, cone, &c.
Or extents in laminä.
Or lengthens into nervules on the paries, or on the margins of the valves of the partitions.
— *Form*—spheric, globular, cylindric, a line or point, 3-gonous or radiate.
— *Consistence*—fleshy, coriaceous or corky.
Sometimes in form of a central column fixed at both ends, serving at the same time to support the seeds and also the partitions.
Or covers whole face of valves and partitions, or extends to edges or middle of each valve.
— *Position*—central, axile, parietal, 1-lateral, 2-lateral.
Generally occupies the central angles of cells in plurilocular pericarps.

RETINACULA—crooked points originating from the placenta and holding the seed, but not bearing them (Acanthaceä.)

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12. FUNICULUS—a fleshy body.
A sheath containing the vascular system of communication, and uniting the pericarp to the seed.
A portion of the substance of the placenta.
Every visible process of the placenta bearing a seed.
The endocarp is pierced where it fixes, to allow a passage from the sarcocarp.
It is called trophosperm when bearing only 1 seed, and podosperm when forming prolongations, each bearing a seed.
Generally supports only one seed.

By its means the seed is connected with the mother-plant, and derives its nourishment.

Filiform (umbilic cord.)

Sometimes increases as the fruit approaches maturity.

Generally shorter than seed.

Sometimes of equal length to the seed, or much longer.

Generally thread-form, or like a fungous peduncle.

Two-branched (Fraxinus, Liriodendron, Magnolia.)

Course or Direction.—Insertion.

BASE (Placenta.)	APEX (Hile.)
1. Base of the fruit.....	1. base (lower extremity) of seed.
	2. vertex (upper ,,) ,, (Prunus, &c.)
	3. middle (ventral part.)
	4. middle (dorsal part) in such a manner that the cord ascends above the vertex of the seed, and being afterwards reflected, enters the hole in the back of the seed (Vitis.)
2. Vertex of the fruit....	1. upper extremity of seed.
	2. lower ,, ,, .
3. Axis of the fruit.....	1. vertex of the seed.
	2. base ,, .
	3. inner horizonal extremity.
	4. middle part.
4. Paries of fruit.....	1. accuminate part of seed.
	2. obtuse ,, .
	3. middle of side between the two extremities.

Its course in drupaceous and nucamentaceous fruits (and in some bony seeds) is remarkable, running in a furrow inscribed on these bony integuments, and passing to the middle or remotest region of the seed, and there connecting with it. (Prunus, &c.)

In various soft seeds it is concealed by their spermodermis, (coat) and runs a long way between its membranes, coming by windings to the point of insertion (Liriodendron, Swietenia, &c.)

Setaceous (in umbeliferä.)

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13. ARILLUS—an expansion of the funicle covering more or less of the seed.

Only adheres at the contour of the hile, and remains fixed to it after dissemination.

Found only in a few seeds.

Never found on seeds of polypetalous flowers.

Considered as belonging the pericarp by Richard.
Membranous or fleshy.
Sometimes adheres to funicle, forming a cup which receives the base of the seed.

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14. PELLICULA—a thin membrane entirely covering some seeds.
Bears hairs with which the seeds seems clothed (Gossypium.)
— *Coma*—a tuft of hairs at one end of the seed.

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15. OVULA—appear in the cellular tissue of the ovary.
This tissue generally detaches itself, and is destroyed by the ovules disapproximating each other.
Are small, round, greenish, smooth, shining bodies.
They are all fixed to the placentary and sometimes by the intervention of the funicle, and receive the extremity of the conducting and nourishing vessels at the hile.
Often many more ovules are found in the ovary than seeds in the fruit, caused by the abortion of some of them.
When the style and stigma are faded, vascular lineaments, the first unequivocal indication of the presence of the embryo, are developed in the fissure of each ovule.
Sometimes bulbiles develope in the cavity of the ovary instead of ovules.
The number varies according to the species.
Some ovaries never contain more than one.
Some contain many thousands.

(*N.* The ovary ought to be dissected to know the primitive character of the fruit, as the form, number of cells and seeds are often changed in passing to the fruit-state, (Æsculus, &c.)
— *(Placentation.)*
Opposite, arising from same point.
Superposited, one above another.
Alternate.
1—2 serial.
Sparsed.
Conglobate.

15.* SEMEN.—the ovule fecundated.
Its essential function is to contain the embryo.
Essentially composed of 2 distinct parts.
— Episperm. (Spermodermis.)
— Nucleus.

** Regions when in its natural state, in and fixed to the pericarp.*

REGIONS.—(adspective parts.)

Its true face is that looking to the axis of the pericarp, and the other face looking to the internal coat of the endocarp (paries) is its back.

Its margin is the part joining these two faces.

If the hile is on the margin, the seed is called compresst, but if it is on either face, depressed.

*** Regions as to itself when out of and independent of the pericarp.*

REGIONS.—*Base*—the end where the hile is placed.

—— *Vertex*—the region directly opposite the former.

—— *Belly*—hile placed in the middle between the two ends, (or in the margin of a rather round or compressed seed.)

—— *Back*—the part opposite the last.

—— *Sides*—the remaining regions.

**** Position when in its natural state, in and fixed to the pericarp.*

POSITION—relative to the axis of the pericarp.

—— *Erect*—every seed fixed at the base of the pericarp or at the base of a cell, when it is multilocular, is said to be erect.

—— *Reversed, inverse or inverted**—seed fixed to the top of pericarp.

(*N.* In these two cases the placenta occupies the base or apex of the cell.)

—— *Ascendent*—if the placenta is axile or parietal, and the seed directs its true apex (point diametrically opposite to its point of fixation) towards the upper part of the cell, it is said to be ascendent.

—— *Suspended*—if its apex looks to the base of the cell, it is said to be suspended.

—— *Peritropal*—if its rational axis (line considered as passing from its base to apex) is transverse relative to the internal coat (paries) of the pericarp, it is called peritropal.

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16. SPERMODERMIS—the envelope surrounding the nucleus.

The proper membrane or tegmen of seed.

Grows with the ovules.

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* Inverted seeds are in some respects pendulous.

But every pendulous seed (fixed by the upper end) is not an inverted one.

Erect seeds may be pendulous (as hanging by top from funicle,) Ruscus, &c.

(*N.* Pendulous indicates insertion and not situation.)

Not very apparent till ovary is become fruit.
Receives the vessels of the funicle.
Consists of three layers—1. Testa.
2. Sarcodermis.
3. Endopleura.
All three rarely found on same seed.
Limits of the three often not decisive.

— 1. *Testa*—a sack without valves or sutures.
Always covers the endopleura.
No certain characters to distinguish it from the testa of nuts and nutlets, or even from the endopleura.
Generally smooth and scaly.

— 2. *Sarcodermis*—a scarcely visible parenchyma, lying under the testa, in which all the vessels from the superfices pass to attain the hile.
When very pulpy, the seeds are called *Semina Baccata.*

— 3. *Endopleura*—applied closely to the nucleus and often confounded with the sarcodermis, from which it is scarcely separable.
Receives the end of the funicle.
Derives its origin from the interior portion of the funicle, which, perforating the testa, disperses in ramifications, which latter being connected by a membrane form the endopleura.
Has no valves or sutures.

---

17. CICATRICULA—point on the surface of the spermodermis, to which the funicle is fixed, and through which the vessels of the placenta communicate with those of the seminal tunics.
Its centre always represents the base of the seed, and its geometric apex is the opposite point.
Aspect and extent various.
— *Spile* (Hile) of Grasses.

OMPHALODIUM—protuberant point, generally situate in the middle of the hile, at which the nourishing vessels end.

MICROPYLA—a point situated on the side of the hile, which appears to be the mark of the place where the conducting vessels of fecundation end.

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18. CHALAZA, (internal hile)—point where the raphe ends on the endopleura.
When no raphe it is generally under (inside) the hile.
Indicates the natural and true apex of the seed.

Point of union of main vessels of spermodermis.
Opaque and of different colour from the surface near it.

EMBRYOSTEGIUM—a swelling on the surface of some seeds at a distance from the hile, corresponding with the radicle, and falling off in germination, to afford a passage for the embryo.

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18. RAPHA*—a sheath containing the vascular system and running from the hile to the chalaza.
A projecting line, often elongated, and reaching from one end of the spermodermis to the other. (Aurantium.)
Appears like elevated fillets.
Prolongation of the vessels of the funicle through the hile to the chalaza.
Runs in the thickness of the testa and pierces its internal face at a point distant from the hile, and there fixes to the endopleura, forming the chalaza.
Where there is no testa it appears on the surface of the endopleura, but where there is both testa and endopleura, it can only be seen by dissecting these two parts.

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19. NUCLEUS—assemblage of organs contained in the spermoderm.
Has no vascular connection with it.
Bears the hile (Nyctago, Coniferä, Avicennea, &c.)
No seed without it.
Sometimes formed entirely of the embryo (when no perisperm is present.)

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20. PERISPERMUM—a part of the nucleus, not embryo.
Seldom adheres with embryo.
Presents no vascular organization.
Does not communicate by any vascular ramification with embryo.
Wanting in many seeds.
—— *Consistence*—oleaginous, cartilaginous, horny, ligneous, fleshy, feculent, granular, &c.
An accessory bound round or at side of embryo.
Furnishes the embryo during germination with nourishment like that of the vitellus in the chick.
Of cellular tissue.
Sometimes so thin as to be taken for a tunic.

---

* Mirbel connects the rapha with the chalaza, under the generic title Prostypium.

Diminishes by germination and so is distinguished from the embryo which augments!

Easily separable.

Always single.

Fixes the natural place of many families.

VITELLUS—every part adhering to the embryo not cotyledons, plumule or radicle.

Not extending without the seed.

Fades during germination.

(*N.* considered an imaginary being by some.)

CHORION—pulpous liquor, which, before fecundation, appears to form the whole kernel, and which disappears before maturity.

Liquid state of nucleus.

—— *Sacculus Coliquamenta*—vesicle of the chorion.

SACK—the end of each funicle developes into a sack (ovule) containing the first lineament of the new plant.

AMNIOS—elaborated in the chorion.

A vitreous, gelatinous or emulsive liquor, not visible till after fecundation, in which the embryo swims, and appears to contribute to its nutrition; the concrete residium of which forms the perisperm.

This liquor is sometimes naked, and sometimes inclosed in a membrane called the sack of the amnios.

(*N.* The milk of the cocoa-nut is the amnios.)

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21. EMBRYO—the most essential part of a vegetable.

A small organized body.

Appears where the funicle perforates the tegmen.

Rudiment of young plant.

Has at first a connection with the seminal envelopes.

Detaches at maturity from the surrounding parts.

Some seeds contain more than one (superfetation.)

Organization very simple.

Must be dissected and often subjected to germination to discover the parts.

The parts in dicotyledons more easily distinguished than those in monocotyledons.

Exists in the perfect seed after fecundation.

Should be examined for botanic purposes in a state of inaction.

—— *In* 1-*cotyledons*—undivided.
No slit or incision.
Always lateral.
Radicle in a coleorhiza.
Gemmule inside.
Pileole (or sheath.)

—— *In* 2-*cotyledons*—radical end always forms base of embryo.

BLASTEMA. (M.)—the embryo stript of its cotyledons
Consists of Collum, Plumula and Radicula.

COLLUM—intermediary part between the plumule and radicle.
Difficult to define till germination.

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22. PLUMULA—generally naked and projecting.
Or coleoptiled.
Cannot be discovered in many embryos till germination.
The first rudiments of the parts to be developed in light and air.
Separated from cotyledons by a Cauliculus.
Produces the stem and leaves in its development.
Composed of Cauliculus and Gemmula.

GEMMULA—a small bud terminating the cauliculus.
The first bud of the infant plant.
Formed of the primordial leaves.

CAULICULUS—rudiment of the stem.
A prolongation of the radicle.
Not always manifest.

COLEOPTILA--originates from the cotyledons and envelopes base of plumule.
A thin sheath covering the gemmule (plumule.)
A membranous or fleshy sheath.

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23. RADICULA—part of the embryo destined to become the root.
Always directed to the side opposite the chalaza.
Receives the lower extremity of all the vascular system of the embryo.
Always simple and undivided in repose (before germination.)
Oft divides into several radicellas in its development.
Many grasses have three or more.

Naked or hid in a coleorhiz (or fleshy pocket closed on all sides.)
Direction often difficult to establish.
Generally respects the circumference, where the embryostege is placed, (and the plumule and cotyledons the centre.)
Its situation must be considered as it respects the hile (not as it respects the fruit, according to Gärtner.*)
Almost always directed to the hile!
(Whence radical superior is generally equal to seed pendant in the capsule
and ,, inferior, equal to seed erect in the capsule.)
Cylindric or conic.
Generally appears as a white spot (speck) on surface of nucleus.
In many genera, it previously requires to know the seed-annexation.
— *In* 1-*cotyledons*—a simple mamelon.
— *In* 2-*cotyledons*—rarely coleorhized.
Not always conic but cylindric, globular or clavate.

EMBRYO, (Direction of parts)—1. *Homotropus*—radicle end points to hile.
(*N.* It may be more or less curved.)
— 2. *Orthotropus*—rectilinear.
— 3. *Antitropus*—cotyledonous end points to hile.
— 4. *Amphitropus*—curved, so that the two ends close and both point to hile.

COLEORHIZA—a small appendage sheath-like, surrounding the origin of some radicles. (Gramineä.)
A fleshy sack inclosing the radicle like a sheath.
Hides the radicle, which then is only discoverable by germination.
Detaches of itself from each radicle.
Richard forms four grand divisions of vegetables from the radicle being naked or in a coleorhiza.
— *Arhizä*—no embryo, no radicle.
— 2. *Endorhizä*—radicle hid by a coleorhiza, under which are one or several radical tubercles, which tear it in germination and change into roots.
— 3. *Synorhizä*—when embodied with perisperm (a rare case.)
— 4. *Exorhizä*—radicle exterior, naked and becoming itself the root.

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* RADICULA, (supera, adscendens)—pointing to the vertex of the fruit.
(infera, descendens)— ,, base of the fruit.
(centripeta)— ,, centre of the fruit.
(centrifuga)— ,, paries of the fruit.
(vaga)— ,, variously.

COTYLEDONARIUM—cotyledons approached and agglutinated together, making a single mass.

An intermediate part.

Simple or divided into two parts (or cotyledons.)

From whence the divisions of vegetables into two great classes.

—— 1. *Monocotyledones*—embryo with one cotyledon.

—— 2. *Dicotyledones*— ,, two cotyledons united base to base.

(*N.* Sometimes there are more than two in the same embryo.)

COTYLEDONES—first leaves of embryo visible in the seed, furnishing it with nourishment during germination.

Situate above the Collum, (never on it.)

United at base.

Generally thick and fleshy when no perisperm is present, and furnish an aliment ready prepared.

Thin and foliaceous when a perisperm is present, and prepare an aliment at the instant of birth.

Not generally the form of common leaves.

—— *Hypogei*—hid under the earth.

—— *Epigei*—out of the earth.

Constitutes the major part of embryos whose radicle and plumule are continuous.

Form cylindric, conic, fungiform, swollen, broad and flat, ovate and split lengthways, &c.

—— *When only one*—always lateral with respect to the axis of the Blastema.

FOLIA—*primordialea*—small leaves which, besides the cotyledons, are visible in the embryo.

In Scirpus (called pileole) closed and covers the other leaves of the gemmule like an extinguisher.

SYNZYGIA—point of junction of opposite cotyledons.

LOBULE—upper cotyledon when they are alternate.

Vascular System.

25. VASCULAR SYSTEM—of an organized body must necessarily be covered.

VESSELS OF PLANTS—always closed at both ends, and pierced with lateral openings for the passage of the fluids.

ORGANS—an organ which has a proper (peculiar) form, position, structure and functions belonging to itself *only*, cannot be considered as the continuation of another organ, though it have an immediate communication with it.

VESSELS.

1 * *From the Parent and ending at the Receptacle.*

VESSELS OF THE WOOD—end at the base of the pistil.

2 * *From the Receptacle of the Fruit.*

VESSELS—of the parent plant penetrate the pistil at its base, and pursue different routes.

Run into the placenta.

NOURISHING VESSELS—carry the nutritive juices to the ovules.

3 * *From the Placenta and on the inner face of Endocarp.*

PARIETAL VESSELS—ramify and cover the internal face of the endocarp and form its skeleton.

4* *From the Chalaza on the Endopleura.*

FUNICULAR VESSELS—ramifications of the nourishing vessels from the chalaza, united by a membrane, constitute the endopleura.

5 * *From the Sacculus to the Embryo ?*

6* *From the Plumule to the Cotyledons.*

SEMINAL RADICELS—small vessels from the plumule into the cotyledons.

7 * *Connected with the Style and Stigma.*

EXCRETORY CANAL—longitudinal perforation of the style and stigma.

CONDUCTING VESSELS—descend from the stigma and run to the placenta ?

Serve the act of fecundation ?

FALSE CONDUCTORS—in adhering ovaries the parietal vessels ascend in distinct bundles to the stigma concurrently with the nervules, (but not united.)

NERVULES—are the thread-like ramifications of the conducting and nourishing vessels,

Are sometimes united in a body.

Or are separate and form several distinct branches applied to the internal face of the endocarp or dissepiments.

Or they cross the cavity like a slender cord fixed only by their ends.

Ascend the stigma from the point of meeting in the placenta, and serve the act of fecundation.

Generally equal to the branches of the placenta, but oft at a distance from their points of departure.

The number of styles is generally equal to the branches of the placentary, and each style receives a nervule.

Sometimes it appears as if there was only one style, though the placentary is branched into an equal number of nervules; but the single style is to be considered as several united.

NOURISHING AND CONDUCTING VESSELS—united in the *exterior* of the placentary, compose vascular fascicles (nervules) which constitute the interior of the funicle.

CHORDA PISTILLARIS—assemblage of one or several fillets (fibres or vessels) which pass from style to ovules, and carry fecundation to them.

Their disposition determines the general structure of the fruit.

Visible in the unfecundated ovaries of Lychnis and other 1-celled fruits of Caryophylleä.

In Citrus (a multilocular fruit) it is central and the seeds fixed to it—composed of as many partial cordets as cells, and may be pursued from their insertion on the receptacle to the stigma.

I state most of the above vessels as I find them mentioned in recent and respectable authors.

The subject is curious and deserves the farther attention of the naturalist.

NOMENCLATURAL CONSPECTUS

TO THE

CARPOLOGIC CONCORDANCE.

DESVAUX. 1.	DECANDOLLE 2.	MIRBEL. 3.	RICHARD. 4.	VARIOUS. 5.
	A. *Pseudospermes. Semina nuda. L.*	*Carcerulares,*	*Fruit dry and indehiscent.*	
	1—(or few) seeded, not opening spontaneously at maturity. Pericarpso closely united to seed as to appear but one envelope.	Fruit simple and remaining closed.	Generally oligospermous. Pericarp generally thin or adhering to the proper tegument of the seed.	Simple, 1 ovary from a single flower.

1 * *Carcerulous Coronate.*

1	3. Stephanäum.....	Achäna (non D.)..	Cypsela.....	Akenium ..... Achäna. N.
			Sacellus.....	Achena. F. F.
				Acenium. Lk.

2 * *Carcerulous Incoronate.*

2	1. Car.....	Car.....	Cerio.....	Cariopsis.....
			Cerium.....	
3	2. Achena(nonD.C.)	*(Utriculus.)....*	*(Cerio.)....*	*(Cariopsis.)....*
			Thecidium.....	
4	5. Catoclesium.....	*(Utriculus.)*	*(Carcerula.)....*	*(Akenium.)....*
5	4. Dyclesium.....	S.....	*(Carcerula.)*	...*(Akenium.)* ..... Scleranthum. Mö.
6	6. Xylodium.....	*X*.....	*(Carcerula.)*	...*(Akenium.)*..... Nux autor.

	DESVAUX. 1.	DECANDOLLE 2.	MIRBEL. 3.	RICHARD. 4.	VARIOUS. 5.
	FLOWERS NAKED & FRUIT-SITE DUBIOUS.—NUCIFEROUS.—FUNICLED.				} IN SOME.
			**** Incoronate.***		
7	28. Strobilus.	S.	S.	S.	S. or Conus.
8	*(Strobilus)*	G.	*(Strobilus)*	*(Strobilus)*	Galbalus. G.
9	7. Nuc.	Nucula	Calybio	*(Glans)*	Nux autor.
			2 * Coronate.		
10	8. G.	G.	*(Calybio)*	G.	Glans.
			3 * Winged.		
11	9. Pterodium	S.	Pterides	S.	Samara. G.
			(Carcerula.)		
			A* BACCA SICCA,		
			Or, Indehiscent Capsule.		
			Polysperm, dry, (not succulent.)		
12	10. Amphisarca	A.	*(Carcerula)*	*(Akenium.)*	
13	11. Carcerulus	Carcerulus	Carcerula	Carcerulus.	

	B. *Gynobasici.*	*Cenobio. Cenobionares. Exostylares.*	*Gynobasici.*	
	Cells (eremes. M.) so far separated that they appear distinct fruits, but they are all articulated on a dilated gynobase, which is the base of a single style. Simple, but composed of four cells (or eremes)	Compound fruits from ovaries not style-bearing.	Cells so far separated that they seem to constitute so many distinct fruits. N. Unity of style necessitates the unity of ovary, so that it is an error to reckon several ovaries to Labiatä, Borragineä, Apocyneä, &c. (R. Dict.)	

	DESVAUX. 1.	DECANDOLLE 2.	MIRBEL. 3.	RICHARD. 4.	VARIOUS. 5.
	31. Sarcobasis, (see Compound Succulents.)				
			* *Coronate.*		
14	24. M.....	Microbasis.....	Exostylus.....		Gynobasici.
			Pol. „ .		
			Cenobium.....		(Akenium.)
	(indehiscent, 4-celled, on a gynophore.)				
		C. *Capsulares. Dehiscentes.*	*Capsulares.*	*Dehiscent*, dry.	
		Dry and inclose many seeds. Open spontaneously at maturity.	Simple, opening at maturity.		
			* *Incoronate.*		
15	12. U.....	U.....	*(Carcerula)*.....	*(Akenium)*	Utriculus. G. Cystidium. Lk.
16	20. Pyxid.....	Pyxid.....	Pyxis.....	Pyxid.....	Pyxidium. Ehr. Capsula Circumcisa. L.
17	18. C.....	C.....	C.....	C.....	Capsula.
			* * *Coronate.*		
18	12. Diplostegia....	D.....	*(Capsula)*.....	*(Capsula)*.....	Capsula infera. Aut.
			DIERESILEI.		
			Simple and divided into several Coccums at maturity.		
19	19. Sterigium.....	D.....	Dieresilis.....	*(Capsula ?)*....	Coccum. G.
			(Coccum.)		
20	17. R.....	R.....	Regmatus.....	Elaterium.....	Capsula, 2-multiloculare.
			(Coccum.)		

	DESVAUX. 1.	DECANDOLLE. 2.	MIRBEL.	RICHARD. 4.	VARIOUS. 5.
21	23. Carpodelium.. Polachena ..... Cremocarpium..... Polachenium. (Loculus.)..... (Coccum.)				
	Siliquoid, Leguminoid.				
22	13. C..... F..... *(Capsula.)*..... *(Capsula.)* ..... Conceptaculum aut. Folliculus. G.				
23	14. S..... S..... S..... S. ..... Siliqua. L. (& Silicula) „ vera & spuria. Mō.				
24	15. L..... L..... L..... L..... Legumen. L. „ & Lomentum. Gä.				
25	16. Hemegyris...H..... *(Capsula.)*..... *(Capsula)*..... Nux autor (improperly.)				
		D. *Multiplices.*	*Etärionares. El. Chorionares. Bul*	*Compound Fruits.*	
		Union of several simple fruits (ovaries) but all from one flower.	Compound fruits from ovaries bearing the styles.	Result from the union of several pistils in the same flower.	
		Dimin. Carpellum.	*Chorio.*		
	Compound Dry. Incoronate.				
26	22. F..... B..... Bifolliculus ..... Folliculus. (Folliculus)..... (Folliculus.)				
27	25. Plopocarpium..P. ..... Etärio..... (Syncarpium) ... Legumoid. P.W.W. Polychorium. Multisiliquä. (Distinct cells form distinct ovaries.). (Camara.)..... (Camara.)..... (Akeninm.)				
28	26. Polysecus..... Polichorio..... Polychorio..... (*Syncarpium*) ... Carceruloid. P.W.W. Polychorionides. (some.) (Camara.)..... (Camara.) ..... (Akenium.)				
29	27. Amalthea..... (*Cynarhoden*) ... (*Polichorio.*)..... (*Syncarpium.*).. Carceruloid. P.W.W. (dry ovaries,) (Camara.) (some.)				

DESVAUX. 1.	DECANDOLLE. 2.	MIRBEL. 3.	RICHARD. 4.	VARIOUS. 5.
	E. *Succulenti. Carnosi.*	*a.* • *Drupacei.*	*Carnosi.*	
	Sarcocarp soft and of a pulpy or fleshy consistence. Inclose only a small number of seeds, and *do not open of themselves* at maturity.	Simple, succulent inclosing 1 nut.		

* *Drupaceous Incoronate.*

30 35. D.....D.....D.....D..... ....Drupa.
(Drupeola.)

31 *(Drupa.)*....Nux. ..... *(Drupa.)* .....*N.*

32 36. N.....N.....*(Drupa.)* .....Nuculaneum.

** *Drupaceous Coronate.*

33 *(Drupa.)*....*(Nux.)* ..... *(Drupa.)* ..... *(Nux.)*.....Tryma. N.

34 45. Syncarpa(nonR.).Ficus..... Syconus..... Syconus ..... Drupa.G.(in Ficus).
(Cariopsis.) .... (Carcerula, Drupeola.)

		b. * • *Bacca.*		
		Simple, succulent, containing many separated seeds.		
		(Bacilla.)		

* *Baccaceous Incoronate.*

35 *(Syncarpa)*...Syncarpa ..... Sorosus ..... Sor.....Capsula utriculosa.G.
(Utriculus.) (in Morus.)

36 33. Arcesthida....Bacca(improperly)..*(Strobilus)*. .... *(Strobilus.)*

37 34. Hesperidium ..Aurantium .... *(Bacca.)*.....H..... Bacca corticata.

38 29. Sphalerocarpium. *(Achena.)*...*(Carcerula.)* ..... *(Akenium.)*

	DESVAUX. 1.	DECANDOLLE 2.	MIRBEL. 3.	RICHARD. 4.	VARIOUS. 5.
39	30. B.....	B.....	B.....	B.....	Bacca aut. „ vera & spuria. Mö. „ & acinus. G.
			** *Baccaceous Coronate.*		
40	31. Acrosarcum...	(*Bacca.*).....	(*Bacca.*).....	(*Bacca.*)	
41	32. Peponida.....	Peponida	Pepo	Peponida.....	Pepo. L. Peponium Brot.
42	39. Balausta.....	B.....	(*Carcerula.*).....	B.	
			F.—COMPOUND SUCCULENT.		
			* *Incoronate.*		
43	42. S.....	Sarcobasis....	Etörio (formerly.)....	Gynobasici?	
	(5 bacciform cells from distinct ovaries.)		(*See Gymnobasici* (D. C.) *for the classic character.*)		
44	41. Erythrostomum..	Er.....	Etörio, (some).....	(*Syncarpium.*)	
	(conic placenta bearing bacci-form ovaries.)		(Utriculus.)..	(Camara.).....	(Drupeola.)
45	43. Baccaularius....	(*Enythrost.*)..	(*Etörio*).....	..(*Syncarpium.*)	
	(bacciform ovaries.)				
46	44. Asimina	(*Erythrost.*)..	(Etörio) (some.).....	..(*Syrcarpium.*)	
	(bacciform ovaries).		(Carpellum.)	(Camara.)	
			BACCACEOUS, OVARY PARIETAL.		
			** *Coronate.*		
			† *Apyreniferous.*		
47	38. Melonidium....	Pomum. a...	Pyridium.....	. Melonida cartilginea..	.Antrum. Mö.
	(ovaries embodied with calyx.)		(Semen.)		

DESVAUX. 1,	DECANDOLLE 2.	MIRBEL. 3.	RICHARD. 4.	VARIOUS. 5.
		†† *Pyreniferous.*		
48 37. Pyrenarius....	Pomum. b....	(*Pyridium.*).....	Melonida-ossea.	Drupoid.P.W.W.
(celis with ligneus endocarp.)		(Semen.)		
49 40. Cynarhodon....	C.....	(*Etörio.*).....	(*Melonida.*)	
(ovaries in a fleshy calyx.)	(Utriculus.)	(Camara.)		

Characters of the Genera enumerated in the above Conspectus.

1 * *Simple, indehiscent, (carcerulous)* dry.

1. STEPHANÆUM—1-seeded, of variable consistence, never ligneous, enveloped by the calyx to which it *adheres*.

N. Presents the characters of *Achena, (D.)* but the pericarp is agglutinated with the calyx and the sepals, or the divisions of the calyx are on the apex composing a sort of crown to it. *Cypsela* (M.) only belongs to a single family of the *Composeæ*, while my *Stephanäum* belongs to several. (D.)

Achäna—generally dry.

Pericarp adhering more or less closely, both with the proper envelope of the seed and with the tube of the calyx. (D. C.)

Cypsela—The pappus is the limb of the calyx. (M.)

Akenium.—Pericarp distinct from the proper tegument of the seed.

Embryo eperispermic, (no perisperm,) homotropous or following the same direction as the seed.

Radicle corresponding with hile.

Generally crowned by the pappus. (R.)

2. CARIOPSIS—1-seeded. Episperm strongly adhering to endocarp. (D.)

Indehiscent. Pericarp very thin, and so closely connected with the seed that it cannot be distinguished from it. (R.)

Endosperm (perisperm) large, farinaceous.

Embryo extraneous. (R.)

Cerio—Pericarp containing a perispermed seed, whose embryo is thrown to one side. (M.)

3. ACHENA—1-seeded.

Pericarp coriaceous, (not ligneous) not contracting adherence with the episperm, (spermoderm.)

N. Approaches *Stephanœum*, but is free.——*Thecidium* (M.) appears to be only an Achena whose pericarp is very hard and sometimes very thick, as in several *Chenopodeä*. (D.)

4. CATOCLESIUM—1-seeded.

Pericarp coriaceous, (not ligneous) covered by the calyx, which is considerably developed but not fleshy.

N. The calyx is so much developed as to present the appearance of a pericarp, particularly in *Chenopodeä*, and more especially in some genera of this family.

Sacellus (M.) is connected with this by *Salsola*, and with *Achena*. (D.) by the other characters given by M. in his characteristic phrase. (D.)

5. DYCLESIUM—1-seeded, covered by the base of corol which has become coriaceous. (D.)

Schleranthum.—

Composed of seeds agglutinated with base of perigone: indurated and persistent. (D. C.)

6. XYLODIUM—not symmetric, 1-seeded, ligneous, borne on a swollen, fleshy gynophore.

N. The name *Nut* was improperly given to the pericarp of *Cassuvium* and *Anacardium*, which have no affinity with the sorts of fruit indicated by authors under this name. (D.)

No cupule. (D. C.)

7. STROBILUS.—Composed of ligneous scales (amphanths) imbricated in various forms, bearing a dry fruit in their axillas, whose pericarp is more or less solid. Placed in sorose by M. (D.)

N. The true *Strobilus* exists only in the Coniferä.

The *Galbalus* (Gä.) is only a spheric strobile.

In *Proteä & Casuarinä*, the assemblage of fruits presents the appearance of a *Strobile*, but in the first it is an assemblage of *Hemigyres*, and in the second of aggregated capsules.

In *Ananas*, the strobile-form fruit results from the union of numerous *Acrosarcs*. (D.)

Composed of a great number of membranous *utriclès*, hid in the axils of prominent bracteas much developed, dry and disposed in the form of a cone. (D. C.)

Union of covered fruits (calybios or carcerulas) originating from several flowers, and inclosed in scales, whose union forms a conic or globular body. (M.)

8. GALBALUS—differing only from *cone* by the bracteas being much enlarged at top, disposed in the form of a sphere and scarcely opening at maturity. (D. C.)

Pericarp suberous, oval, composed of peltate scales, ray-form, mucronate in centre, at apex of which adhere 4—several seeds. (Gä.)*

9. NUCULA—1-seeded, generally.

Pericarp symmetric, ligneous, with a membranous, herbaceous calyx (cupule, amphanth) at its base.

N. Peculiar to *Corylus*. Has apparently the same organization as the *Glans* and the *Sphalerocarp* as in *Taxus*, but it ought clearly to be distinguished from them, otherwise it should be called *Glans*, because it has a *cupula* (amphanth) like those cited, which would introduce a confusion in botanic language. The term *Nut* of authors is vague, and is any thing dry and ligneous. (D.)

Envelope osseous, 1-celled, 1-seeded, not opening at maturity.

Pericarp scarcely distinct from seed, oft embossed in an involucre. (D. C.)

10. GLANS—generally 1-seeded.

Pericarp coriaceous, applied closely to the episperm, provided with a calyx or particular involucre (amphanth) which covers it wholly or in part, called *cupule* in *Quercus*, and *Involucre* in *Fagus* and *Custanea*.

Is found in *Fagus* and several *Laurels*. (D.)

Fleshy, feculent, 1-celled, 1-seeded. Pericarp adhering closely to seed, which is inchased and articulated by its base in a coriaceous cupula (amphanth) formed by the scales of the involucre. (D. C.)

One-celled, 1-seeded (by the constant abortion of several ovules) always originating from an inferior, plurilocular, polysperm ovary, whose pericarp, closely united to the seed, always presents, at its apex, very small dents of the limb of the calyx, and is inclosed in part (rarely totally) in a sort of scaly involucre (cupula.)

Form very variable.

Cupula.—Scaly and very short, or much developed, covering nearly the whole of the fruit. (R.)

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* CALYBIO—formed of one or several glans, (carcerulä) contained in a cupule, (the Nucula and Glans of D. C.)

N, *Cupula*, the cup. *Glans*, the carpel. (M.)

11. PTERODIUM—1—2-locular, 1-seeded, sometimes polyspermous, bordered by a more or less prominent membrane *(Pterides, Ala, Pteregium)* on its angles. (D.)

Oligospermous, coriaceous, much compressed, membranous, 1—2-indehiscent-celled. (R.)

12. AMPHISARCA—multilocular. Epicarp, ligneous. Endocarp, pulpy. *(N.* Rare.)

Polysperm. (D. C.)

13. CARCERULUS—multilocular. Cells confluent or distinct.

Pericarp dry, indehiscent. (D.)

Several-seeded. (D. C.)

Capsular.

Very variable, but different from *Cypsela* and *Cerio.*

Ala (pterigium) when winged. (M.)

14. MICROBASIS—indehiscent, borne on a fleshy gynophore (gynobase R.) distinctly 4-celled, 1-seeded, produced from a single ovary, borne on a disk. Endocarp, coriaceous. (D.)

Gynobase very small, scarcely fleshy, 4-celled, scarcely distinct at floration. (D. C.)

Composed of several *eremes*, (pericarpian cells) without valves or sutures, originating from ovaries not bearing styles. (M.)

Cells so remote from each other, that they appear to constitute so many separate fruits. (R.)

Gynobasici, } Four akenes, united at base on a common receptacle (Labiatä.)
Polakenium, } (R.)

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2 ** *Simple, dehiscent, (capsular) dry.*

15. UTRICULUS—1-spermous. Pericarp membranous, scarcely apparent, and never united to the episperm, which is always more or less crustaceous.

Dehiscence various, sometimes horizontal. (D.)

Not adhering to calyx. Pericarp little apparent, yet the funicle visible. (D.C.)

N. Mirbel confuses *Utriculus, Scleranthum, and Samara,* with his *Carcerula.* (D.)

16. PYXIDIUM—presents the characters of a capsule, but opens horizontally or circularly. (D.)

Dry, globular, opening in the middle, by means of a transverse, horizontal fissure, and divided into 2 hemispheric valves. (D. C.)

Opening by a transverse suture into 2 superposited valves. (R.)

Amphora, the lower valve, } (D. C.)
Operculum, upper ,, . }

17. CAPSULA—a little fleshy, dry at maturity, never ligneous.
Dehiscence regular, but not always symmetric.

N. Very variable as to number of cells, seeds and their points of attach.—Difficult to characterise. Comprehends all the simple, dried fruits not embraced by the other definitions (of opening capsules.) Unfortunately vague. (D.)

18. DIPLOSTEGIA—dry, rarely 1-celled, covered by the calyx.
1. Partable, those that divide into several parts by the separation of the valves.
2. Those not dehiscent but by an opening at the base at maturation.
Sometimes takes a ligneous consistency. (D.)
Dehiscent, adhering to calyx. (D. C.)

19. STERIGIUM—multilocular. Cell, 1-polyspermous, sometimes indehiscent, distinct, produced by a single ovary and adhering to a common axis or persisting columella, and more or less projecting.
N. The species of fruit I establish has no affinity with *Synochorio*. M. (D.)
Dry, regular, composed of several cells ranged round a common axis, formed by the entering valves.
A capsule with valvular partitions (of authors.)
Scarcely differs from valvular partitions. (D. C.)

20. REGMATUS—dry, sometimes very coriaceous, generally 3-celled, (rarely 2-multilocular.) Cells separating with elasticity, 1—2-seeded. Partition dividing at the middle of cells. Epicarp herbaceous, as if fleshy. Endocarp cartilaginous, or almost ligneous, very often separating one from another. (D.)
Not adhering to calyx. Oft with projecting (elevated) ridges (lirä), composed of several 2-valved coccums, disposed verticillately, (ray-like) round an axis. (D. C.)
Dieresilian, losing (in general) its pannextern at maturity, and dividing into several 2-valved coccums, which open by an elastic movement. (M.)
Elaterium.—Often lirate, naturally dividing at maturity into so many distinct coccums as there are cells, and opening longitudinally, and so 3-multicoccous.
—— *Coccums*—are generally united by a central columella, which persists (remains) after their fall. (R.)

21. CARPODELIUM—generally 2-celled (never 1-celled) rarely many-celled, enveloped by the calyx. Cells distinct, 1-seeded, indehiscent, opposite!—Seeds often adhering to endocarp.

N. Placed with several different fruits under *Polakenium* by R.
Mirbel only includes the *Umbeliferä* in *Cremocarp.*
Perhaps it would be more proper to name only the *Araleaceä* Carpodeles. (D.)
Composed of several cells, longitudinally separable at maturity, united and inclosed in a calyx. (D. C.)
Dieresilian, adhering to calyx. Pericarp divisible into two indehiscent coccums, each containing a reversed, perispermed seed, adhering to the interior coat of *coccum.* (M.)
Simple and formed by an adhering ovary, separating at maturity into two or more cells, each to be considered as an Akene, hence 2—3—5-akenous. (R.)
Cremocarpium.——*Coccum*—closed cells of a plurilocular pericarp, separating one from another at maturity. (M.)

22. CONCEPTACULUM—Sometimes not symmetric, 1-locular, 2-valved.
Seeds placed on the edge of the suture.
N. A kind of capsule allied to *Siliqua,* but differing from the absence of the partition. (D.)
Folliculus—Membranous, long, opening by a longitudinal suture.
Never solitary but by abortion. (D. C.)

23. SILIQUA & SILICULA—2-valved, 2-celled.
Seeds on the edge of the sutures.
N. Siliqua. At least four times longer than broad.
Silicula. Never „ „ „ „ (D.) often only 1-2 seeded (R.)
Some genera bear the character of achena. (D.)
Seeds fixed to both sutures.
A longitudinal partition parallel to the valves in most.
Partition opposite to the valves when they are sensibly compressed, (keeled.) (D. C.)
Pericarp, regular bearing the seed on both sides of a placentary, dilated into a longitudinal partition. (M.)
Seeds fixed to two sutural trophosperms (placentas.)
Generally separated into two cells by a false partition, parallel to the valves, which is only a prolongation of the trophosperm (placenta) and which often remains after the fall of the valves. (R.)
—— *Vera.* Seeds fixed to both edges of the longitudinal partition.
—— *Spuria.* Seeds fixed to the edges of the valves themselves. (Mö.)

24. LEGUMEN—Not symmetric, almost always 2-valved.
Seeds fixed on one side only on the edge of the suture. (D.)
Membranous, 2 (rarely 3-4) valved.

Pistillary cord, divided into two branches running parallel on the upper suture.
Seeds fixed to this suture alternately to both valves.

(Lomentum.) When divided into 2—several 1-seeded cells, by transverse partitions. (D. C.)

Pericarp irregular, bearing the seed on a lateral placentary, fixed to one of the two sutures. (M.)

Seeds fixed to a trophosperm (placenta) which follows the direction of one of the sutures.

Naturally 1-celled, but is sometimes divided into 2—several cells, by false partitions.

Sometimes—1. cylindric and separated into many cells by a diaphragm (transverse, false partition.)

——— 2. or jointed (lomentaceous.)

——— 3. or swollen, vesicled with semi-transparent paries.

——— 4. or indehiscent. (R.)

25. HEMIGYRUS—not symmetric, oft ligneous, dehiscent on one side only, 1-locular (rarely 2-locular,) cells 1—2-seeded.

N. Distinct from capsule by its ligneous consistence. (D.)

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3 * *Compound, dry.*

Syncarpa. R. Compound. From several ovaries belonging to one and the same flower, amalgamated and united together, even before fecundation.

The fruit of *Fragaria and Rubus* is formed by a number of true, small *drupes* (drupeoles M.) whose sarcocarp is thin, but yet very manifest in *Fragaria*.

United on a fleshy polyphore more or less developed.

Several small *akenes* compose the fruit of the *Ranunculaceä*. (R.)

N. Includes all the compound fruits of R.

26. FOLLICULUS—2-celled, polyspermous, distinct, but produced by a single ovary. Dehiscent at inface of cells.

N. very distinct from plopocarp. (D.)

Membranous, 1-valved, elongated and opening by a longitudinal suture.
Always 2. (D. C.)

Geminate (or solitary by abortion) generally membranous, 1-locular, 1-valved, opening by a longitudinal suture, to which is fixed interiorly a sutural trophosperm (placenta) which becomes free by the dehiscence of the pericarp.

The seeds are rarely fixed to both edges of the suture. (Apocineä. R.)

Bifolliculus—composed of two follicles.

Pericarpian *boxes* each formed of a valve, bent in its length, and agglutinated by its edges. (M.)

27. PLOPOCARPIUM—composed of several separate cells and belonging to several distinct ovaries. The cells are generally polyspermous and dehiscent. (D.)

Etörio—composed of several camaras, pericarpian, 2-valved cells, organized like *legumes*. (M.)

Several camaras united round a real or ideal axis. (D.)

Camara membranous, composed of two valves, agglutinated and inclosing 1—several seeds, fixed to the interior angle.

Always multiplex, many originating from same flower. (D. C.)

28. POLYSECUS.—Cells all produced from a distinct ovary, 1-seeded, indehiscent and borne by a receptacle, in form of a column, distinct from the disk.

N. In *Fragaria* the receptacle is fleshy and pulpy.

It is near *Plopocarpium*, but distinct from it by the central part (particular receptacle) and non-dehiscence. (D.)

Polychorio—several *Cariopses* or *Achenas* united on a receptacle. (D. C.)

29. AMALTHEA.—Composed of several dry ovaries, not symmetric, inclosed in the cavity of a coriaceous calyx, closed by its apex. (D.)

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4 * *Simple, succulent.*

30. DRUPA.—Fleshy, 1-celled. Endocarp ligneous, easily separable from the sarcocarp at maturation.

N. Drupeola (M.) may be given to some small, drupaceous fruits.

Juglans, which some make distinct, is only a drupe. (D.) (Tryma. Necker.)

Simple, fleshy, containing a nut.

Pannexterna, (the epicarp.)

Putamen, (the stony endocarp.)

Drupeola, when smaller than a pea. (M.)

Fleshy, inclosing a nut, which nut is formed by the indurated and ossified endocarp, (putamen) united to a part of the sarcocarp. (R.)

31. NUX.—Inclosing a nut like the drupe, but the sarcocarp (naucum) rather coriaceous than fleshy.

N. Scarcely differs from drupe. (D. C.)

Differs from drupa by a thinner sarcocarp, (naucum.)

(Juglans, Amygdalus. R.)

32. NUCULANEUM.—Fleshy, free, inclosing several cells (putamens) formed by the endocarp which is ligneous. These cells are sometimes united with each other, but more habitually separated.

N. It is a drupe, inclosing more than one nutlet or cell. (Pyrenä Nuculä. D.)
Fleshy, originating from a free ovary, inclosing several nutlets, (Nuculä. R.)

33. TRYMA.—only differs from drupe by a thinner sarcocarp (naucum.)
Incloses a 2-valved nut. Sarcocarp coriaceous (not fleshy.)

34. SYNCARPA.—Formed by the union of several distinct flowers by means of a particular receptacle, whose form is so various that so many particular fruits might be made of them, graduating imperceptibly from the most simple—in which all the parts are apparent—to the most complicated in which all the parts are hid in a particular envelope, taken for a fruit.

1. Receptacle filiform, berries spiked.
2. „ swollen, „ approached. (Syncarpa. D. C. Sorosus. M. R.)
3. „ columnar and set with confluent berries.
4. „ spread.
5. „ cupuliform. } Syconus. (R. M.)
6. „ pyriform. (Ficus. D. C.) }

N. Sorose (M. in Journ. Phys.) is only a *Syncarp*.

The name syncarp, proposed by Richard for a fruit composed of several ovaries, produced from a single flower, appears to me more properly implied in the sense of D. C. which sense I adopt. (D.)

Several small, berry-like utricles, united on a scarcely perceptible polyphore. (D. C.)

35. SOROSUS—Several fruits united in a single body by the intervention of floral, succulent and intergrafted envelopes.

The nature of the fruit and envelopes are to be taken into consideration. (M.)

Union of several fruits into a single body by the intervention of floral envelopes, fleshy, much developed and intergrafted so as to represent a papillose berry. (R.)

Syconus—Union of covered fruits.

Carcerules or drupeoles, originating from several flowers placed on a clinanth, which spreads on the interior paries of an involucre. (M.)

Involucre, 1-phyllous, with fleshy interior, having a flat, ovoid, or closed form and containing a number of drupeoles, originating from so many female flowers. (R.)

Ficus—a great number of cariopses united in a fleshy and succulent involucre. (D. C.)

36. ARCESTHIDA—spheric, resulting from the amalgamation of several fleshy scales, in whose axillas the fruit is found.

N. It is a modification of the strobile, presenting the consistence of a berry. (D.)
Bacca (improperly) differs from *Galbalus*, the bracteas being fleshy and not separating at maturity. (D. C.)

37. HESPERIDIUM—simple, fleshy, indehiscent, multilocular. Cells distinct. Epicarp membranous, separable. Sarcocarp spongy. Endocarp bearing pulpy cellules. Seeds with coriaceous episperm.
N. I call it so rather than orange, as D. C. for otherwise we must call a citron and a lemon orange, which would imply a contradiction. (D.)
Divided into several cells within by membranous partitions. (R.)
Aurantium—fleshy.
Envelope very thick and provided with vesicular glands, interiorly divided into several membranons cells, separable without tearing. (D. C.)

38. SPHALEROCARPIUM—1-seeded, indehiscent, covered wholly or in part by the calyx, which has assumed the appearance of a berry or fleshy pericarp. The true pericarp is seldom ligneous.
In *Taxus*, the capsule which represents the calyx remains open at top.
N. Allied to *Catoclesium*, but differs from the nature of the substance of the calyx, which is fleshy, and appears to form a true berry. (D.)

39. BACCA—fleshy, more often pulpy, 1—many-celled, generally spheric. Cells often scarcely visible from the effect of development.
In *Jasmineä*, the berry is didymous.
N. The true berries are much less frequent than is imagined, because this term is given to many fruits which are not berries. (D.)
All fleshy fruits without nuts. (D. C.)
—— *Vera.* Mö. No cells, and the seed without order.
—— *Spuria.* „. With cells, and the seeds ranged in apparent order.
Acinus. Gä. Soft, juicy, transparent, 1-celled and osseous, (nutleted) seeds. (Nuculaneum? R.)
Baccaceous, very variable, containing several nutlets or distinct seeds, and differing from *Peridium* and *Pepo.* (M.)

40. ACROSARCUM—spheric, sometimes didymous, fleshy, amalgamated with the calyx and often crowned by it, and presenting the characters of a berry. (D.) A crowned berry. (D. C.)
N. Includes all inferior, bacciferous fruits. (D.)

41.—PEPONIDA—inferior, generally multilocular, presenting no parietal membrane or endocarp distinct.

Seeds fixed to the paries. (D.)

Pericarp baccaceous, pulpy within, placenta radiate from the centre. Seeds in the circumference.

Fleshy, indehiscent (or ruptile) of several cells sparsed in the pulp, each inclosing a seed, which is so agglutinated to the internal parietal membrane of each cell, as to be separated with difficulty. (R.)

Pepo—Fleshy.

Seeds disapproximated from the axis, placed near the circumference, which is much harder than the almost empty centre. (D. C.)

Baccaceous pericarp, pulpy within, divided into several cells by a rayed placentary which bears the seeds near the circumference of the fruit, often obliterating in the centre at maturity.

N. These characters only visible in the ovary-state—after floration the sterile partitions always obliterate, and also the placentarial divisions. (M.)

42. BALAUSTA—inferior, composed of a coriaceous (not succulent) pericarp, inclosing a great number of seeds whose episperm is drupaceous. (D.)

Adhering to and crowned by the calyx.

Peel hard, coriaceous.

Compartments irregular, inclosing nut-like, osseous seeds. (D. C.)

Plurilocular, polyspermous, always originating from a true inferior ovary, and crowned by the dents of calyx. (R.)

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5 * *Compound, succulent.*

43. SARCOBASIS—cells generally 5, separated, bacciform, produced from distinct ovaries, and borne by a very large, fleshy disk. (D.)

Gynobase, very large, very fleshy, bearing 5 or more cells, separate at all periods of existence. (D. C.)

44. ERYTHROSTOMUM—composed of a conic placenta, bearing a great number of distinct bacciform ovaries, produced by a single flower and forming a fruit by their union. (D.)

Several small, berry-like utricles, united on a scarcely apparent polyphore. (D. C.)

Multiplex from several ovaries belonging to one flower, amalgamated and united together even before fecundation. (R.)

45. BACCAULARIUS—several distinct, bacciform ovaries, more or less separated, produced by a single flower, (never provided with a fleshy disk.)

N. Closely allied to *Sarcobase* and only different from the absence of the fleshy disk. (D.)

46. ASIMINA—ovaries numerous, bacciform, 1-locular, produced from a single flower, united in the form of a spheric fruit.

N. Mirbel puts Rubus (and Carosolle) in *Etörio*, which I consider very unnatural. (D.)

47. MELONIDIUM.—Formed by the fleshy calyx, umbilicated and perforated at apex for the passage of the style, and with which the ovaries are embodied by their periphery. Epicarp and sarcocarp, confounded with the substance of the calyx. Endocarp parenchymatous.

N. In Cydonia the whole of the pericarp may be separated or isolated by opening the calyx and breaking its adherences. (D.)

Pomum.—Fleshy, crowned by lobes of calyx with which the ovary was embodied, inclosing several cells, each clothed with a proper tunic. (D. C.)

Pyridium.—Baccaceous, containing several seeds in cells, verticillate round the central axis. (M.)

Melonida.—Fleshy, from several parietal ovaries, united and amalgamated with the tube of calyx, which is often thick and fleshy, and confounded with them.

The fleshy part is not formed by the pericarp itself, but by a considerable thickening of the calyx.

The endocarp is either cartilaginous or osseous; in this latter case, there are as many nutlets as ovaries. (Mespilus. R.)

1. Cells formed of membranous, cartilaginous valves.
2. Cells ligneous. (D. C.)

48. PYRENARIUS.—Pulpy, semi-inferior, multilocular. Cells with ligneous endocarp.

N. Mespilus has many nutlets.

Eläagnus, which has only one, is closely allied to it, but it is always covered by the calyx and embodied with it. (D.)

49. CYNARHODON.—Fleshy, composed of a great number of ovaries, with solid pericarps, inclosed in a fleshy, almost closed calyx, but only embodied with its interior paries.

N. Calycanthus is clearly distinct. (D.)

Several horny utricles united in the calyx, which becomes fleshy after floration. D. C.

EXAMPLES

OF

LIGNEOUS EUROPEAN AND NORTH AMERICAN GENERA,

(And some few of other Countries)

ACCORDING TO

THE CARPOLOGIC CONCORDANCE, REFERRED TO GÄRTNER,

Where Figures of the Fruits and Seeds and Dissections of their minute parts may be seen.

1* *Carcerular, simple, indehiscent, dry.*

1. STEPHÄNAUM.

Synantheræ.
Syngenesiæ.
Compositæ.
Dipsaceæ.
Valerianeæ.
Lagoëcia cucuminoides.

Trapa natans...	vol. I.	p. 127	tab. 26
Prenanthes	II.	358	158
Stähelina			
Santolina		391	165
Artemesia		410	167
Gnaphalium.....		391	165
Baccharis		405	166
Conyza.....		*ibid.*	*ibid.*
Cineraria		446	170
Achillea.....		426	168
Centaurea		376 382 385	163 161 162
Othonna		452	170
Iva		394	164
Valeriana		35	86
Scabiasa		38	86

2. CARIOPSIS.

Sparganium.....	I.	75	19

Gramineæ (some.)

3. ACHENA.

Gramineæ (others.)
Cyperaceæ. (all.)

Fumaria.....	II.	162	115

Cruciferæ (some)
Arunda ... .

4. CATOCLESIUM.

Chenopodeæ (some.)
Urticeæ (some.)

Camphorosma	vol. III.	p. 175	tab. 213
Salsola	I.	359	75
Anabasis			
Chenopodium	I.	360	75
Atriplex.....		361	75
Salicornia	II.	210	127
Urtica.....		183	119

(Semina nuda. Gä)

Globularia	I.	211	44
Platanus..... ...	II.	57	90

5. DYCLESIUM.

Mirabilis		207	127

6. XYLODIUM.

Cassuvium (Acajuba)	I.	192	40
Anacondium		*ibid.*	*ibid.*

7. CONUS *(Strobilus.)*

8. GALBALUS.

Calybio (Nux. G.)

Cupressus	II.	64	91
Thuja Orientalis ...		61	91
Ephedra.			
Alnus.....		54	90

9. NUCULA, *(Nux. G,)*

Corylus	II.	52	89

10. GLANS.

*(Nux. Gä.) * Coronate.*

Fagus.	vol. I.	p. 182	tab. 37
Castanea.			
Carpinus.....	II.	52	89
Ostrya.			
Quercus.....	I.	182	37

*(Nux. Gä.) ** Incoronate.*

Stellera		186	39
Hamamelis.			
Passerina	III.	197	215
Comptonia	II.	58	90
Planera.			
Aucuba,			

11. PTERIDIUM.

1-Celled.

Ulmus	I.	224	49
Betula..... ...	II.	53	90

2-Celled.

Fontanesia.....	III.	193	215
Acer	II.	166	116
Fraxinus	I.	222	49
Ptelca.....		223	49

3-Celled.

Mylocarium			
Paliurus		203	43

Various.

Calligonum.....	III.	200	215
Halesia			
Liriodendron	II.	475	178
Ailanthus..... .			
Pinus...		59	91
Thuja.....		61	91

12. AMPHISARCA.

Amphalocarpium.....			
Adansonia.....		253	135
Crescentia.....			

13. CARCERULUS. (not in extent with M.)

Tilia.....		150	113

(And many genera in Sapindeä J.

Cenobian, dry.

14. MICROBASIS.

Labiatæ...			
Borragineæ (some)			
Ziziphora	I.	316	66
Rosmarinus		316	66
Salvia		316	66
Teucrium			
Satureja			
Hissopus.....			
Lavandula	vol. I.	p. 320	tab. 66
Sideritis			
Stachys.....			
Marrhubium			
Phlomis.....		319	66
Origanum			
Thymus			
Calamintha			
Prasium.....		321	66
Heliotropium		329	68
Echium		326	67
Lithospermum		327	67

*2 * Capsular, simple, dehiscent dry.*

15. UTRICULUS.

Polygoneæ (some).			
Amaranthaceæ(some)			
Atraphaxis.....	II.	181	119
Polygonum.....		181	119
Iresine.....			
Herniaria			

16. PYXIDIUM.

Plantago.....	I.	236	51
Anagallis.....		230	50
Certunculus.....		228	50
Gomphræna.....	II.	216	128
Lechytis.....			
Hyoscyamus.....	I.	369	75
Portulaca.....	II.	212	128
Celosia.....		215	128

17. CAPSULA.

1-Celled.

Viola.....		139	112
Illecebrum (Paronychia).....	III.	36	184
Tamarix	I.	291	61
Statice.....		210	44
Gypsophila.....			
Dianthus.....	II.	227	129
Brunnichia.....	I.	213	45
Hudsonia.....	III.	152	210
Tigarea.....			
Ascyrum	I.	297	62
Salix.....	II.	55	90
Populus		56	90
Diotis. (Axyris).....	II.	210	128
Clusia			
Helianthemum.....	I.	371	76
Liquidambar.....	II.	57	90

2-Celled.

Syringa.....	I.	224	49
Buddleja		226	49

Verbascum.....	vol. I.	p. 262	tab. 55
Veronica.....		257	54
Schrophularia		249	53
Antirrhinum.....		248	53
Pentstemon			
Fothergilla.....			
2—3-Celled.			
Azalea.....		301	63
Clethra.....		301	63
Cyrilla.....	III.	147	209
3-Celled.			
Silene.....	II.	233	130
Phlox.....	I.	299	62
Celastrus	II.	85	95
Croton.....		118	107
Aloe	I.	67	17
Xylophylla	II.	123	108
Æsculus (Hippo-castanum).....		135	111
Kölreuteria.....			
Thea	II.	83	95
3-(5-many-Celled.)			
Convolvulus.....		247	134
Hypericum.....	I.	300	62
Corchorus		307	64
	II.	482	179
4-Celled.			
Diervilla.....			
Menziesia.....	III.	145	209
Erica.....	I.	302	63
Cephalanthus.....	II.	41	86
4—5-Celled.			
Ruta		138	111
Evonymus.....		149	113
5-Celled.			
Kalmia	I.	305	63
Ledum.....	II.	145	112
Amyrsine			
Rhodora.....	III.	144	209
Epigäa			
Rhododendron	I.	304	63
Andromeda.....		304	63
	II.	481	178
Gaultheria.....	I.	306	63
Pyrola		303	63
Reaumuria			
Cistus.....		370	76
6-many-Celled.			
Linum.....	II.	146	112
Befaria.....	III.	146	209
Capsules—several.			
Staphylea	I.	334	69
Sapindus.....			
Wendlandia			
Mylocarium.....			

18. DIPLOSTEGIA.

Irideæ & Orchideæ..			
2-Celled.			
Pinckneya.....	vol. III.	p. 80	tab. 194
Hydrangea.....	I.	150	30
Hortensia			
3-Celled.			
Campanula.....		153	31
Agave.			
4—5-Celled.			
Philadelphus.....	I.	173	35
5-Celled.			
Ænothera			
6-Celled.			
Aristolochia.....		45	14
10-Celled.			
Decumaria.....			

19. STERIGIUM.

Malvaceæ			
Geraniaceæ			
Hibiscus.	II.	250	134
Gordonia.....			
Lavatera.....		256	136
Malva.....		254	136

20. REGMATUS.

Euphorbiaceæ.....			
Euphorbia(Tithymalus)		115	107
Buxus.		125	108
Stillingia			
Borya (Adelia).....			
Ceanothus.....		110	106

21. CARPODELIUM.

Umbelliferæ			
Araliaceæ			
Rubiacæ (European.)			
Bupleurum.....	I.	97	22
Seseli.....			
Eryngium.....		77	20
Asperula.....	III.	89	195
Rubia.....		85	195
Crucianella.....	I.	111	24
Mercurialis	II.	114	107

22. CONCEPTACULUM.

Corydalis.....			
Cleome	I.	368	76
Hypecoum	II.	164	115
Chelidonium		164	115
Glaucium.....		165	115
Itea.	III.	142	209

Bignonia / Catalpa	vol. I. p. 240		tab. 52

23. SILIQUA.

Biscutella	II.	278	141
Vella		285	141
Iberis		279	141
Lepidium		281	141
Alyssum		282	141
Cheiranthus		296	143
Mathiola			

24. LEGUMEN.

a. Non Diadelphous. (10—1.)

Sophora / Edwardsia	II.	320	149
Anagyris			
Cercis		303	144
Cassia		313	147
Virgilia			

1. * *Dioecia.*

Gymnocladius

2. * *Polygàmia.*

Acacia		317	148
Mimosa		334	155
Gleditschia		311	146
Ceratonia		310	146

b. Diadelphous.

Polygala	I.	294	62
Amorpha	II.	305	144
Genista		329	151
Spartium		338	153
Lupinus		324	150
Anthyllis		307	145
Ulex / Stauarcanthus		330	141
Ononis		343	154
Colutea		342	154
Astragalus		339	154
Psoralea		308	145
Hedysarum		346	155
Coronilla		344	155
Hippocrepis			
Medicago		348	155
Glycine		343	154
Apios			
Robinia		307	145
Caragana			
Indigofera		317	148
Lespedeza			
Cytisus			
Lotus		336	153
Dorycneum			

25. HEMIGYRUS.

Proteaceæ

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3. * *Compound, dry.*

26. FOLLICULUS.—(non D. C.)

Apoineæ			
Asclepiadeæ			
Vinca	vol. II. p. 172		tab. 117
Nerium		172	117
Echites			
Periploca			
Gonolobium			
Gelseminum			

27. PLOPOCARPIUM.

Ranunculaceæ. § 2.			
Rosaceæ. § Ulmariæ (Spiræa. J.)			
Atismaceæ. (Alismoideæ. Vent.)			
Crassulaeeæ. (Sempervivæ. J.)			
Spiräa	I.	337	69
Sedum		313	65
Cotyledon			
Sempervivum		314	65
Illicium		338	69
Xylopia			

28. POLYSECUS.

Ranunculaceæ, § 1			
Rosaceæ. § Dryadeæ. (Potentillæ. J.)			
Atragene	I.	356	74
Clematis		353	74
Päonia		309	65
Zanthoriza			
Dryas		352	74
Potentilla			
Calycanthus			
Magnolia		343	70
Liriodendron	II.	475	178
Michelia	III.	70	192

29. AMALTHEA.

Rosaceæ. § (Agrimoniæ, Sanguisorbæ. J)

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4 * *Succulent, simple.*

30. DRUPA.

* *Incoronate.*

1-*Celled.*

Olea	II.	75	93
Hamiltonia			
Bumelia	III.	126	202
Eläocarpus	I.	202	43
Thymelea / Daphne		188	39

Prunus.....	vol. II.	p. 74	tab. 93
Laurus.....		68	92
Celtis.....	I.	374	77
Nitraria.....		279	58
Chrysobalanus.....			
Myrica.....		190	39
Styrax.....		284	59
Rhus.....		205	44
Menispernum.....		219	46
Pistacia.....			
Salisburia			
{ Rhapis.....			
{ Sabal.....			
Phönix			
2-Celled.			
Phillyrea..... ...	II.	71	92
Zizyphus.....	I.	202	43
Chionanthus		189	39
Paliurus.....		203	43
3-Celled.			
{ Chamälia		342	70
{ Cneorum			
Eläodendrum.....	I.	274	57
4-Celled.			
Vitex.....		269	56
** *Coronate.*			
1-Celled.			
Nyssa.....	III.	201	216
Eläagnus.....		203	216
Osyris.....		204	216
2-Celled.			
Cornus.....	I.	126	26
3-Celled.			
Hopea	III.	140	209
4-Celled.			
Halesia.....	I.	160	32

31. NUX.

Amygdalus	II.	74	93

32. NUCULANEUM.

Melia.....		474	180
Bontia	III.	168	212
Spondias.....	II.	101	103
Rhamnus.....		111	106

33. TRYMA.

Juglans.....		50	89

34. FICUS. (D. C.)

Ficus..... {	vol. II.	p. 66	tab. 91
		484	179

35. SYNCARPA. (D.C.)

Morus.....		199	126
Broussonetia.....			
Maclura?.....			

36. ARCESTHIDA.

Juniperus		62	91

37. HESPERIDIUM.

Citrus.....		189	121

38. SPHALEROCARPIUM.

Basella		200	126
Blitum.....		200	126
Taxus.....		65	91

39. BACCA.

1-Celled.

Jasminum..	I.	196	42
Ilex (Aquifolium)...	II.	72	92
Cestrum.....	I.	378	77
Androsämum(Hypericum.)		282	59
Toxicodendrum (Rhus.)		207	44
Berberris		200	42
Dirca.....			
Capparis.			
Sideroxylum.....	III.	123	202
Empetrum.	II.	107	106
Chamärops (Chamäriphes.).....	I.	25	9
Hippophæ.....		199	42
{ Passiflora.	I.	289	60
{ Granadilla	II.	479	177
Zamia..... ...	I.	15	3
Callicarpa.....	II.	80	94
Ceratiola.....			
Coriaria			

2-Celled.

Ligustrum.....		72	92
Atropa		240	131
Physalis.			
Solanum.....		239	131
Lycium		242	132

2—3-Celled.

Rhamnus.....		111	106

3-Celled.

{ Schinus.....		276	140
{ Amyris.....			
Asparagus.....	I.	58	16
Smilax.....		59	16
Ruscus.		60	16
Linnäa.....			

4-Celled.

Ilex.....
Fuchia.....

5-Celled.

Hedera..... vol. I. p. 139 tab. 26
Arbutus..... 284 59
Aralia .....
Vitis..... II. 108 106
Stuartia .....

6-Celled.

Prinos.....
Yucca..... 34 85

8-many-Celled.

Diospyros..... { 478 179 / III. 136 208

Various.

Poterium.....

40. ACROSARCUM.

1-Celled.

Capparis.....
{ Grossularia..... I. 143 28
{ Ribes .....
Viburnum..... 133 27
Sambucus..... 137 27
{ Cactus..... II. 265 138
{ Opuntia.....
Schisandra.....
Osyris..... III. 204 216
Viscum..... I. 131 27
Lonicera..... 132 27

1—3-Celled.

{ Caprifolium..... 135 27
{ Lonicera.....

2-Celled.

Chiococca..... 125 26

2—3-Celled.

Myrtus..... 184 38

3-Celled.

Tamus..... ....
Aristotelia..... vol. III. p. 160 tab. 211

4—5-Celled.

Vaccinium..... I. 142 28
Cissus.....

41. PEPONIDA.

Cucurbitaceæ .....
Nymphaceæ .....

42. BALAUSTA.

Punica .... I. 183 38

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5. * *Compound, Succulent.*

43. SARCOBASIS.

Ochoaceæ.....
Simaroubeæ .....
Castela.....

44. ERYTHROSTOMUM.

Rubus ..... I. 350 73

45. BACCAULARIUS.

Drymis..... .....
Zanthoxylum..... 333 68
Menispermum.... { 219 46 / 70

46. ASIMINA.

{ Anona..... II. 193 138
{ Porcelia.....

47. MELONIDIUM.

Pyrus..... 44 87

48. PYRENARIUS.

Mespilus..... 43 87

49. CYNARHODON.

Rosa..... I. 347 73

Note.—Page 60. Lechytis ? / Porlulaca ? } per D.

No. 14. Microbasis. / 21. Carpodelium. / 34.&35. Syncarpa } are placed with the compound by D.

The natural orders and some few not ligneous genera, are added by way of farther illustration.

REVIEW

OF THE ABOVE

NOMENCLATURAL CONSPECTUS,

GENERIC TABLE

AND LIST OF EXAMPLES.

THE fruit is always the development of a single ovary, or of aggregates of ovaries, resulting, in both cases, from a single flower.

ARRANGEMENT.

I have adhered pretty strictly to Desvaux, as, in my opinion, the most elaborate, clear and complete. The displacement of his numbers will shew where I have differed from him as to arrangement.

De Candolle sometimes includes several of Desvaux' Genera in a single one of his own, which seems rather to obscure than elucidate the subject.

Richard generalises too much by his reluctance to the creation of new genera.

Simple, dry, carcerulous (imprisoned.)

The leading character of these is, that the fruit has neither valves nor sutures, and, of course, does not open spontaneously at maturity.

The pericarp is so closely pressed on the spermoderm as to appear but one and the same envelope to the nucleus (kernel), though every fruit is presumed to have these two envelopes distinct.

On dissection no funicle is discoverable in many such fruits, and they have been called naked seeds (without pericarp,) as according with an artificial rather than a natural principle.

The class might be divided into two distinct sections { 1. Funicled. / 2. not ,, . }

Stephanäum, cariopsis and achena have been more clearly separated by D. than by other carpologists, but the latter genus does not seem that of De Candolle and others of the same name. The examples under Pterodium probably may not all possess, though most have, the carcerulous character, and the prolonged membranes (wings) must predominate in characterising their association. They perhaps might as well have been placed immediately close to the dehiscents.

Simple, dehiscent (capsular) dry.

The leading character of these fruits is dehiscence.

De Candolle has included his utriculus with the indehiscent, and confounded in it Sacellus, Thecidium, and Carcerula, M. (a residuary genus) and Achena, Catoclesium and Sphalerocarpium, (D.) Carpadelium, D. is by him placed with the compounds.

Compound, dry.

De Candolle has constructed his genus *Camara*, which merges into Plopocarpium (D.) from the *Carpel*, M. of that name, and placed it after Folliculus, with the simple fruits from its legumoid structure, and probably considering the aggregation as only conglutinated cells (camares) of one fruit; but these carpels, resulting from distinct ovaries, all included in one and the same flower, necessitate its location with the compounds.

I have brought these legumoid capsules close to the compound of similar structure, which I consider more natural.

Succulent.

By separating this rich class from the dry, it may be placed at the head of the carpologic table, or at the end, according to the view of the collector. The specimens must generally be kept in jars of spirits and so are conveniently separated.

A principal character is indehiscence, which has led some to place them after the carcerulous.

I have adopted Tryma from Necker for Juglans, as a clearly distinct genus, from its 2-valved putamen.

Melonidium, Pyrenarius and Cynarhodon, (all Melonidia, R.) I have placed with the compounds, as Richard wished to have done, though the location of the genus Pyrus here, is not quite so satisfactory.

General Observations.

I should not be disinclined to locate the whole of the compound fruits, according to the structure of their carpels with the simple ones, (though many result from one and the same flower) and consider the generic terms applied to aggregate masses, as not belonging to the fruit itself but extrinsic from carpology.

Aggregates.—This class I merge in with the simple fruits; for though some of the floral teguments may increase with the ovaries (as nurses) I do not consider this circumstance sufficient of itself to warrant either distinct classification or sectional or even generic denominations. Constructing genera of fruits from the aggregation of their amphanths, however intimately connected, cannot be considered as correct; especially as these amphanths do not perform the essential functions of pericarps, by exteriorly bearing the style and stigma and interiorly the placenta. Such amphanths ought to be considered as extraneous parts and not parts of the fruit itself. The aggregates, strobile, (cone, galbalus) syncarpa, arcesthida, &c. originating from the disposition of involucres, bracteas or scales, (amphanths) are rather to be considered as modes of inflorescence only, and the more particularly as each fruit results from its own peculiar single flower, and not in aggregates from one flower only; and these terms designating aggregates ought to be changed for such as respect some character of the *Carpidium*.

Improper Generic Terms.

The last genus in each of Mirbel's classes is a residuary, which is going so far only, but not analysing the residium.

Samara, Gä. is not a good term, as there is a genus of plants of the same name.

Ficus, D. C. is in the like predicament.

Camara, D. C. is a bad genus, being the same as the diminutive (carpel) of M.

Nux, D. C. (drupa) is too general a term.

Bacca, D. C. (arcesthida) is repeated under two genera.

Syncarpa, D. (syconus and sorosus) is adopted from R. who includes all the compound fruits in it, and not the aggregates, which are by him otherwise and separately specified.

Carpology is a difficult and curious part of botany, and essential in the construction of genera. It has been but little attended to in Britain, and I, as yet, know of no very extensive collections of fruits and seeds.

Mr. Henry Shepherd, of the Liverpool Botanic Garden, has taken considerable pains and made a very pretty collection of them from harvesting the product of that beautiful establishment.

Indeed the materials are of difficult attainment, and the study requires the aid of extensive home and foreign collections. Very few plants in those most extensive departments, the stove and green-house, bear fruit in Britain, which I know by inspecting from time to time very extensive collections. A list of such as actually bear fruit with us, is a desideratum; many plants, particularly in the stove department, even never flower.

The Carpologic Tables, as far as respects the English reader, are new and worthy of his particular attention.

MISCELLANEOUS OBSERVATIONS.

Double Name.

The double name, that most simple, but happy invention of Linneus, by which objects of natural history are specified, without the verbiage and tautology of the older writers.

Chemistry and Pharmacy, under the able Lavoisier and others, took advantage of this invention, and adopted it in their nomenclatures.

No doubt its simplicity will ultimately extend it to all other branches of medical science, but more particularly to the vegetable department, and that prescriptions and the labels of the officinal drawers will be expressed in the trivial names of Linneus, instead of the often cumbrous, and now, in other respects, obsolete language of the Bauhines.

Importance of Dendrology.

The number of books published on Forestry, in Germany in particular, is truly astonishing; they indicate, however, the degree of importance attached to the raising of Forest Trees in that country. In some parts of northern Europe there yet remain natural forests extending hundreds of miles. In these cold regions, where coal is not indigenous, and of course but little used, miserable indeed would be the prospects of posterity if they had not extensive and native resources of wood.

Yet these precious gifts of nature are often wantonly destroyed by lavish waste or the cupidity of the proprietors in their vast exportations of timber, so that many of the mightly forests of Russia, Sweden, Germany, &c. are fast sweeping away.

The immense calls of our extensive naval architecture, in particular, prompt the vigilant cares and ardent efforts of our land-proprietors, to plant the wastes of Britain with useful timber-trees, to meet our future exigencies.

Coal.

Even coal, that precious article, must one day be exhausted; for its use is annihilation! The pits are not growing up again, as some imagine; and nothing less than a dreadful catastrophe of Nature can produce a similar substance.

The wanton consumption of this valuable material is at once impolitic, and, to the well-wishers of posterity, alarming.

Its frequent unnecessary use in putting various machinery into motion, and more recently, in its extended application in propelling vessels by steam (though wonderfully grand, and, to our age, creditable inventions), which before was done by the free agents wind and water, and which might yet, in most cases, answer the like purposes. The great quantity used in making coal gas, &c. &c. and, above all, the very needless and vast exportations to foreign countries. Some years ago it was stated in the House, that in about 400 years, at the then rate of its consumption, the whole of the coal of Britain would be exhausted; and had this statement been made at the present time, under its accumulated destructive use, the calculation would, no doubt, have been limited to a shorter period!

TERMS.

Our conceptions of forms and figures must be established, compared, regulated, and limited by typic impressions on the mind; for, although the forms and figures of vegetables are so extremely multifarious, and in many cases irregular and inconstant, yet there is always a leading aspect determining an approximation to some evident type. The rich language of botany has borrowed much from geometry, anatomy, and other sciences, to assist its elucidation, as these sciences had long been ardently studied and clothed with expressive nomenclatures.

So that we must now have pretty correct notions of solid forms and superficial figures to assist our conclusions, otherwise our expressions will be vague and nugatory.

The terms axis, diameter, ray, segment, arch, sector (section)—the form of triangles, plane and spheric—the quantities of their angles, right, obtuse and acute—the bases and apices of bodies, ovate, acute, obtuse, cordate, &c.—their desinence, whether linear, apicular, angular, round, &c. and all these affections again mixed with each other, must occupy a portion of the mind, or our statements are confused and chaotic.

Tomation (Decoupure, French) of the margin and disk of superficial bodies, is an important part of botanic definition.

A. MARGINAL.

* *Constituted by curved Lines.*

Sinus and angle obtuse—in and excurved.
in and excrenate.
repand.

Sinus obtuse—angle acute—uncinate-dentate,
hook-dentate,
hamate,
} with spiral dents.

---

incurved.
increnate.
scolloped.
repand-dentate. W.

---

acuminate.
dentate-acuminate.

Sinus acute—angle obtuse—excrenate.
obtuse-dentate.

---

dentate.
crenate-dentate.

Sinus and angle acute.....acute-dentate.
hook-serrate.....with spiral dents.

** *Constituted by right Lines.*

Sinus and angle obtuse.....obtuse-dentate.
Sinus right-angular—angle acute—dentate.
Sinus and angle acute.....acute-dentate.
acuminate- „
Irregular.....truncate-serrate.
&c. &c.
Angles, (dents, serratures, &c.) open, close, imbricating; naked, mucronate, &c.

B. DISCAL.

— incised.—Incision.....one fourth depth of disk.
— cleft, (fid.)—Fissure....one half „ .
— parted.—Parting (Part) three-fourths „ .
— sected.—Section.....cut to the axis.

N. The sinus and angle (lobe) may be obtuse or angular, &c.

Elevations.	*Excavations.*
Liration.	Sulcation.
Lirate.	Sulcate.
Lineate, diminutive of lirate.	Striate, diminutive of sulcate.

Carinate, acute-lirate.
Dorsate, obtuse- ,, .
Gibbose, gibbose- ,, .
Exarate, exarate- ,, .
(Quadrangular.)

} The excavations are these reversed.

N. Streaked respects colour only.

Pubescence is opposed to baldness.

* *Erect.*

Solitary.
Villous.
Pilose.
Setaceous.
Hirtous.
Hispid.

** *Inclined.*

Sericeous.
Strigose.

*** *Various.*

Tufted.
Stellate.
Tomentose.
Lanate.
Arachnoid.
&c.

NEW TERMS.

I have introduced very few terms not used in common language, the arts, or by former botanists.

Subface—I use instead of the barbarous term under-surface.

Anthopode—for the assemblage of peduncles and pedicels supporting the inflorescence.

Podophyl—for the leaves found on these supports (involucres, bracteas, &c.)

Amphanth.—I use this term principally in the *Amentaceä* and *Coniferä*, where it occurs as a nurse (cherisher) of the fructification; involucre, bractea, scale, calyx, and other terms, have been used by authors for it.

Phoron—the bearer of any parts of the fructification (disk.)

Insertion of the stamens I have generally stated after Richard's views.—Some other trifling alterations of common language, as inequal for unequal, &c. &c.

Too much attention cannot be paid to definition, the most essential and difficult part of language.

The sciences ought, and are privileged, to assume a strict phraseology, distinct from the loose language of conversation.

By neglecting this principle, latitudinous and vague descriptive phrases are often used, not characteristic of the subjects meant to be identified.

DIAGRAMS.

I purposed illustrating the carpologic tables by diagrams of the leading parts cut in wood, but I found they would have cost a considerable sum and have extended my work some numbers farther, which probably would not have met with approbation. To those who possess the indispensable work of Gärtner, their omission will not be material.

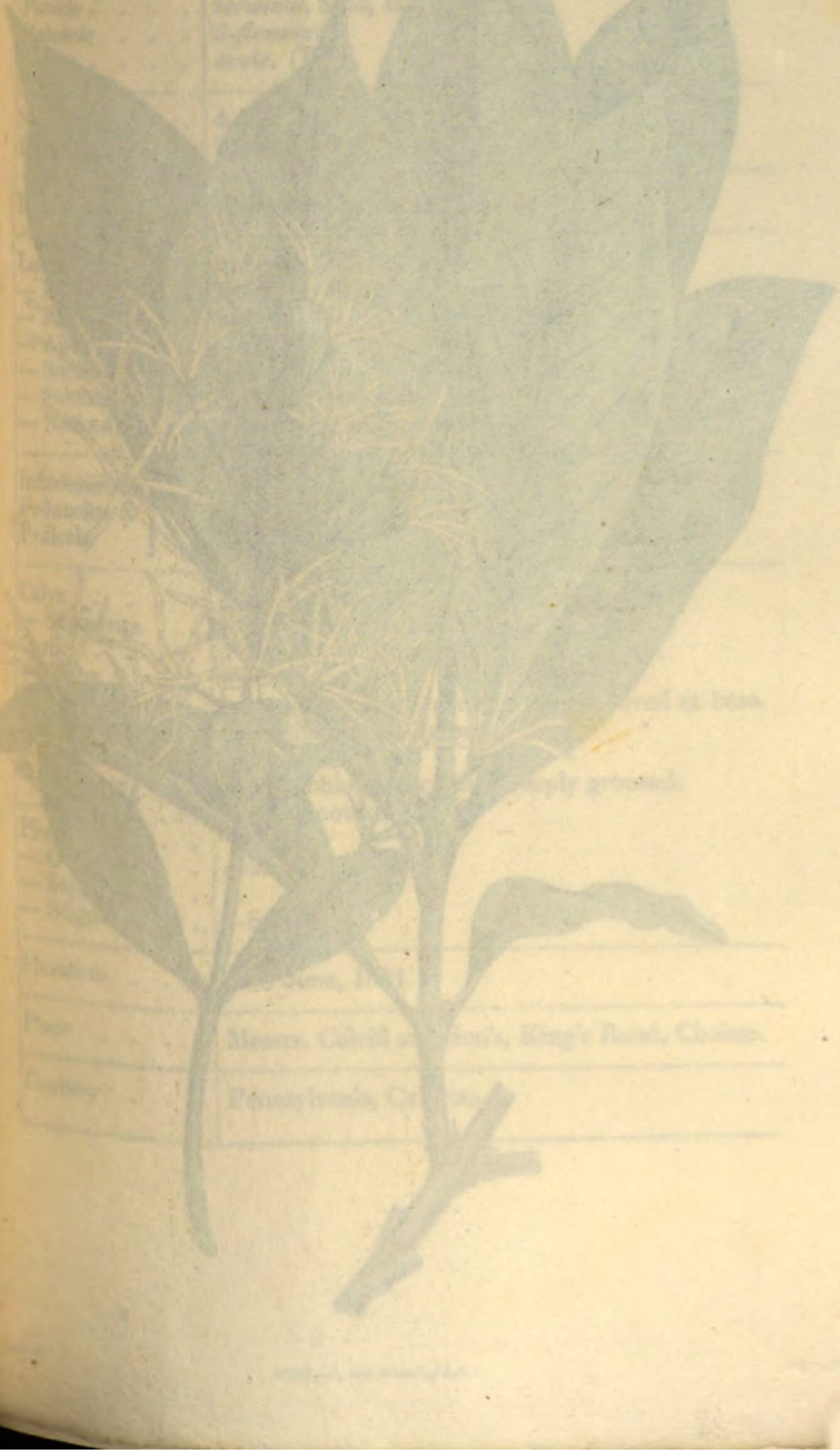
The synonymes of various authors, about which great uncertainty prevails, I have placed in the index at the end of the second volume, to give the descriptions a clear and simple appearance.

P. W. WATSON.

Cottingham, near Hull, 1st *January*, 1825.

CHIONANTHUS VIRGINICA. (

Fringe Tree.



Pub.by J. and A. Arch. Jan.1 1823.

Weddell Sc.

1.

CHIONANTHUS VIRGINICA. (W.) V. ANGUSTIFOLIA (H. K.)

Fringe Tree.

Panicle	*terminal, 3-fid, lax.*
Peduncle . . .	*3-flowered.*
Leaves	*acute.* (W.)
Shrub	4-5 F.
Branches . . .	brown, glab.
Petiole	short, purple, solitarily white haired.
Leaves	opposite, elliptic-lanceolate.
— Margin . . .	intire, involute.
— Base	attenuated.
— Apex	acute.
— Surface . . .	glab.
— Subface . . .	(parenchyma) glab.
— Nerves . . .	prominent, subpubescent.
Inflorescence . .	a long, loose panicle.
Peduncles & Pedicels . .	green, glab.
Calyx	glab. 4-parted.
— Segments . .	long, subserrate, acuminate.
Corol	1-petaled, 4-10-parted.
— Tube . . .	= calyx.
— Segments . .	long, linear, intire, acute, white, grooved at base.
Stamens . . .	2, sessile on base of corol.
— Filaments . .	0.
— Anthers . .	simple, oblong, each face deeply grooved.
— Margin . .	finely grooved.
Pistil	
— Ovary . . .	ovate, conic, free.
— Style . . .	0.
— Stigma . . .	3-fid.
Floration . . .	13th June, 1821.
Place	Messrs. Colvill and Son's, King's Road, Chelsea.
Country . . .	Pennsylvania, Carolina.

1.

CHIONANTHUS VIRGINICA. (*W.*) v. ANGUSTIFOLIA (*R. & S.*)

Virgin Tree.

Del. Pub.by J.&A.Arch Jan.1 1823. Weddell Sc.

2.

FONTANESIA PHILLYRAEOIDES. (W.)

Phillyrea-leaved Fontanesia.

Leaves	*elliptic-lanceolate, acute.*
Flowers	*racemose.* (Dh. nov.)
Shrub	bushy, 7-8 F.
Branches . . .	pale drab-color, glab.
Petiole	short, glab.
Leaves	opposite, elliptic.
— Margin . . .	with a few extremely fine, distant, serratures, tipt with minute prickles.
— Base . . .	rather tapering and decurrent on the petiole to its insertion.
— Apex . . .	acute, mucronate.
Inflorescence.	
— Spikes . . .	axillary and terminal.
Peduncle . . .	herbaceous, glab.
— Pedicel . . .	„ , „ , = flower.
Bracteas . . .	glab. long, narrow, pointed.
Calyx	4-parted, glab.
— Segments . .	long, narrow, intire, pointed.
Corol	4-petaled.
— Petals . . .	oblong, intire, glab.
—— Ends . . .	obtuse.
Stamens . . .	4, longer than corol, inserted between the petals.
— Filaments . .	glab. = anthers.
— Anthers . .	basifixt.
—— Lobes . .	united, oblong, cordate, ridged each side.
Pistil.	
—— Ovary . .	oval, flat, free.
—— Style . . .	= ovary, flat.
—— Stigma . .	scarcely apparent.
Samara	2 celled.
— Cells . . .	1 seeded.
Floration . . .	12th June, 1821.
Place	Arboretum, Kew.
Country . . .	Syria.
Dissections . .	f. 1. Samara. —2. the same cut transversely.

2.

FONTANESIA PHILLYRAEOIDES. (W.)

Philyrea-leaved Fontanesia.

J.Hart.Del.

Pub.by.J.&A.Arch.Jan.1 1823.

Wad.Lath.Sc

3.

ILEX OPACA. (W.)

Carolina Holly.

Leaves	*ovate, acute, spinous, glab. flat.*
Flowers	*Sparsed at the bases of the last year's branches.*(W.)
Tree	18-20 F. forming an oval head.
Stem	5 F.
— Diameter . .	8 inches.
— Bark . . .	intire, warty.
— Branches . .	(lower) hanging.
— „ . .	(upper) ascending.
Petiole	short, glab.
Leaves	flat, alternate, elliptic.
— Margin . . .	subrepand-dentate.
—— Dents . .	4 each side, short, obtuse-angular.
——— Sinus . .	shallow.
——— Sides . .	both incurved (making the sinus).
——— Vertices .	spinous, $\frac{1}{10}$ inch long.
— Base . . .	narrowed.
— Apex . . .	acuminate, spinous.
— Surface . . .	shining, glab.
— Subface . .	not shining, glab. paler.
— Axis	prominent, glab.
—— Branches .	immersed.
Flowers	sparsed on the branches and shoots.
Peduncle . . .	1-3-flowered, hairy.
— Pedicel . .	hairy.
Bracteas . . .	small, deltoid, at base of each pedicel.
Calyx	short, covered with small, elevated particles.
— Segments . .	acute.
— Sinus . . .	very obtuse.
Corol	glab. cruciform, 4-petaled.
— Petals . . .	
—— Sides . . .	parallel.
—— Apex . . .	obtuse or subemarginate.
Stamens . . .	4, $\frac{2}{3}$ length of petals and inserted in their interstices.
— Filaments . .	flat, glab.
— Anthers . .	flat, 3-angular-hastate, agglutinated on the filaments.
Pistil	
— Ovary . . .	globular, glab.
— Style . . .	0.
— Stigma . . .	lobe-puckered, large, covering crown of ovary.
Floration . . .	4th July, 1821.
Place	Arboretum, Kew.
Country . . .	Canada to Carolina, New Jersey.

3.

ILEX OPACA (W.)

Carolina Holly.

Leaves	ovate, acute, spinose, glab. flat.
Flowers	Spermod at the bases of the last year's branches (W.)
Tree	15–20 F. forming an oval head.
Stem	1 F.
— Diameter . .	3 inches.
— Bark . . .	hitting warty.
— Branches . .	(lower) horizontal.
— " . . .	(upper) ascending.
Petiole . . .	short, glab.
Leaves . . .	flat, alternate, subpetiolate.
— Margin . .	subspinose-dentate.
— Base . . .	4 small side short, obtuse-angular.
— Size . . .	shallow.
— Sides . . .	both incurved (resting the spine).
— Veins . . .	glabrous, 15 pairs long.
— Base . . .	narrowed.
— Apex . . .	acuminate, spinose.
— Surface . .	shining, glab.
— Substance .	coriaceous.
— Axis . . .	pentahedral, glab.
— Branches .	tuberculated.
Flowers . . .	spread on the branches and shoots
Peduncle . .	1–3-flowered, hairy.
— Pedicel . .	hairy.
Bracteæ . . .	small, falcate, at base of each pedicel.
Calyx . . .	short, conical with small elevated parallels.
— Segments .	acute.
— Sinus . . .	very obtuse.
— Petals . .	globular, glab.
— Stamens . .	6.
— Anthers . .	lobe-parallel, large, covering crown of ovary.
— Pollen . .	glab.
Fecundation . .	4th July, 1861.
Fruit . . .	Arboretum, Kew.
Country . . .	Canada to Carolina, New Jersey.

2. 1.

J Hart Del. Pub. by J & A Arch. Jan. 1 1823. Waddell Sc

4.

ILEX ANGUSTIFOLIA. (W. E.)

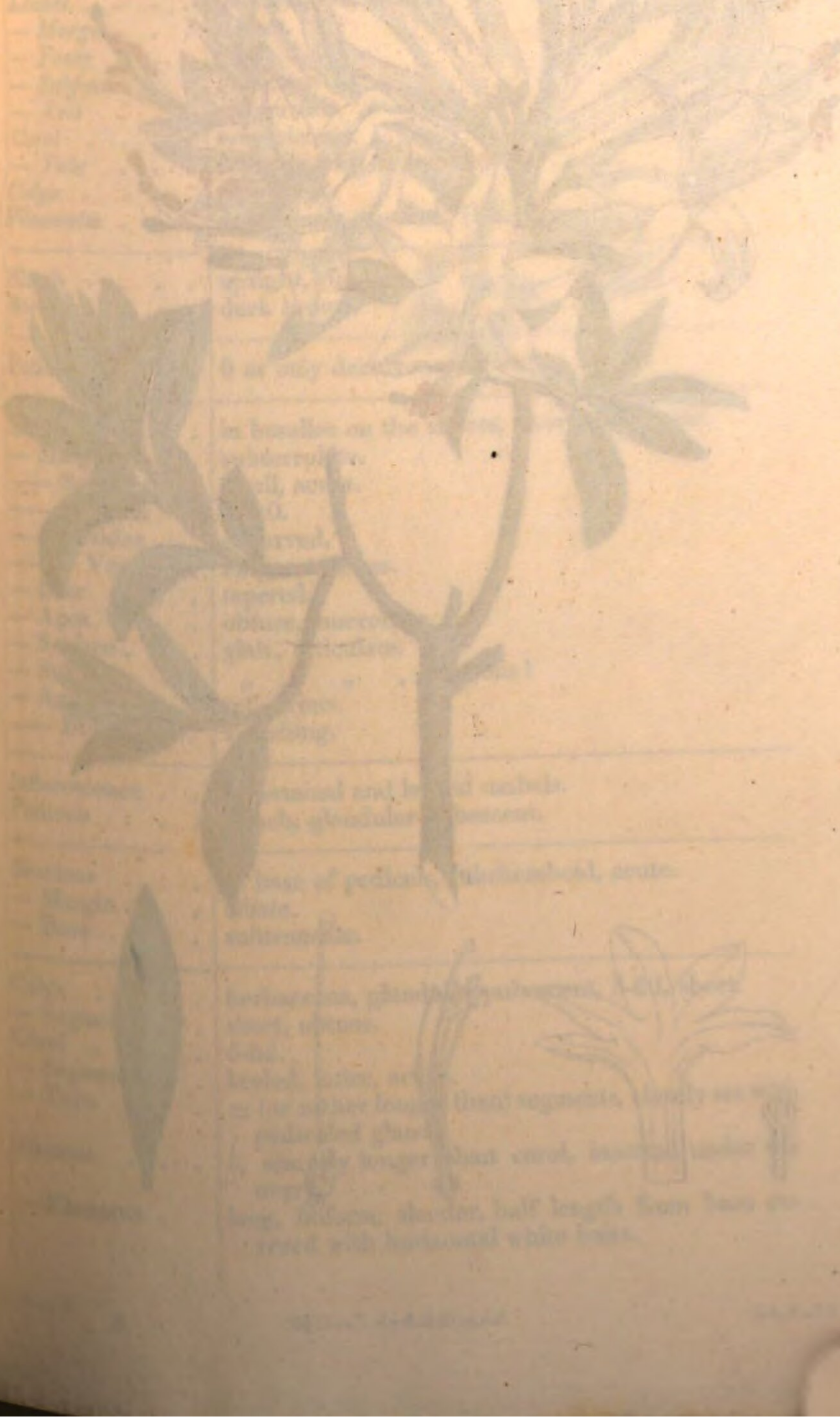
Myrtle-leaved Holly.

Leaves	*alternate, distant, evergreen, linear-lanceolate, shining.*
— *Apex* . . .	*serrate.*
— *Axis*	*(subface) glab.* (W. E.)
Shrnb	2—3 F. upright.
Branches . . .	stiff, straight, shortly downy above.
Petiole	short, pubescent, grooved above.
Leaves	alternate, coriaceous, linear-lanceolate, $2\frac{1}{2}$ ⫫ $\frac{1}{2}$ inch.
— Margin . . .	intire or only 1—2 spine-like serratures each side, near the apex.
— Base	acute.
— Apex . . .	„ mucronate.
— Surface . . .	glab. shining.
— Subface . . .	„ paler and dull.
— Axis	prominent with solitary hairs.
— Branches .	obsolete.
Corymbs . . .	3—7-flowered, peduncled, axillary and along the branchlets.
Bracteas. . . .	minute, red, scale-like, at base of pedicels.
Calyx	4-dentate.
— Dents . . .	acute-angular.
— Sinus . . .	„ .
— Margin . .	intire, transparent.
Corol	1-petaled, 4-parted, rotate.
— Segments . .	obtuse, intire, patent.
— Claws . .	adhering by a small portion.
Stamens . . .	4, shorter than corol, inserted at the interstices of its segments.
— Filaments . .	glab.
— Anthers. . .	„ . suborbicular, basifixt.
— Lobes . .	adnate, oblong, grooved.
Pistil	short.
— Ovary . . .	broad, conic, free.
— Style. . . .	0.
— Stigmas. . .	scarcely apparent (3.)
Floration . . .	28th June, 1822.
Place	T. Canham's, Esq. Twickenham.
Country. . . .	Carolina.
Dissection . . .	f. 1. calyx with ovary and styles. —2. corol and stamens as seen from above.

ILEX ANGUSTIFOLIA. (W. E.)

8

AZALEA OBTUSA.



E.D.Smith.Del. Pub.by J&A.Arch. Jan 1.1823. Weddell Sc.

5.

AZALEA GLAUCA.

Glaucous Azalea.

Branchlets . .	*hispid.*
Leaves	*oblanceolate, acute.*
— *Margin* . . .	*ciliate.*
— *Faces* . . .	*glab.*
— *Subface* . .	*glaucous.*
— *Axis* . . .	*setigerous.*
Corol	*very viscous.*
— *Tube* . . .	*twice as long as segments.*
Calyx	*very short.*
Filaments . . .	*=segments of corol.* (Ph.)
Shrub	upright, rigid.
Stem	dark brown.
Petiole	0 or only decurrence of leaf.
Leaves	in bundles on the shoots, obovate, cuneate.
— Margin . . .	subserrulate.
—— Serrulatures	small, acute.
——— Sinus . .	sub 0.
——— Sides . .	excurved.
——— Vertices .	long, setaceous.
— Base . . .	tapered.
— Apex . . .	obtuse, mucronate.
— Surface . . .	glab., reticulate.
— Subface . .	„ , „ , glaucous !
— Axis	setigerous.
—— Branches .	vanishing.
Inflorescence . .	in terminal and lateral umbels.
Pedicels . . .	$\frac{1}{4}$ inch, glandular-pubescent.
Bracteas . . .	at base of pedicels, subrhomboid, acute.
— Margin . . .	ciliate.
— Base . . .	subtruncate.
Calyx	herbaceous, glandular-pubescent, 5-fid, short.
— Segments . .	short, obtuse.
Corol	5-fid.
— Segments . .	keeled, intire, acute.
— Tube . . .	= (or rather longer than) segments, closely set with pediceled glands.
Stamens . . .	5, scarcely longer than corol, inserted under the ovary.
— Filaments . .	long, filiform, slender, half length from base covered with horizontal white hairs.

— Anthers . .	oblong, fixed a little below apex of filament.
Pistil.	
— Ovary . . .	short, 5-sided, covered with erect, white, bristle-like bodies.
— Style . . .	= stamens, slender, filiform, thickened a little upwards.
— Stigma . . .	thick, brown, fungous.
Floration . . .	24th June, 1821.
Place	Messrs. Colvill and Son's, King's Road, Chelsea.
Country . . .	New England to Virginia.

AZALEA HISPIDA. (Pursh.)

Tab. glaucous, hispid.

6.

AZALEA HISPIDA. (Ph.)

Tall glaucous Azalea.

Flowers	*leafy.*
Branches . . .	*stiff, very hispid.*
Leaves	*long-lanceolate.*
— *Margin* . . .	*ciliate.*
— *Faces* . . .	*glaucous.*
— *Surface* . . .	*hispid.*
— *Subface* . .	*glab.*
— *Nerves* . . .	*setigerous.*
Corol-Tube . .	*scarcely longer than segments.*
Calyx-Dents . .	*oblong, rotundate.*
Filaments . . .	*exerted.* (Ph.)
Shrub	low.
Branches . . .	brown, glab. hispid upwards.
— Shoots . . .	green hispid.
Leaves	alternate and tufted terminal, long-lanceolate.
— Margin . . .	setaceous-serrulate, ciliate.
—— Serrulations	subimbricate (on each other).
—— Sinus . .	sub 0.
—— Sides . .	(exterior) excurved, (interior) sub 0.
—— Vertices .	setaceous.
— Base . . .	long attenuated.
— Apex . . .	acute-angular, indurated.
— Surface . . .	subhispid, subglaucous.
— Subface . .	glab. glaucous.
— Axis . . .	prominent, setigerous.
— Branches & — Veins	level with parenchyma.
Inflorescence . .	a simple, terminal umbel.
Pedicels . . .	green, pubescent, $\frac{1}{2}$ length of tube.
Bracteas . . .	leafy, at base of umbel.
Calyx	pubescent, 5-parted.
— Segments . .	long!! linear!! obtuse, ciliate.
Coral	5-fid.
— Tube . . .	$1\frac{1}{2}$ as long as segments, subviscous, horizontally glandular-setaceous.
— Segments . .	lanceolate, intire, keeled, acuminate.
Stamens . . .	5, 3 longer and 2 shorter (sub = corol.)
Pistil	rather exceeding corol.
— Ovary . . .	oblong, long white-haired, shorter than calyx.
— Style . . .	slender, filiform, glab.
— Stigma . . .	simple, (the thickened apex of style).
Floration . . .	13th July, 1821, at Mr. Knight's, King's Road, Chelsea.
Country . . .	N. America. Pennsylvania, New York.

6.

AZALEA HISPIDA. (Pl.)

Tall glaucous shrubs.

Flowers . . .	leafy.
Pinnules . . .	ciliate-serrulate.
Leaves . . .	lanceolate.
— Midrib . . .	oblique.
— Pores . . .	glutinous.
— Surface . . .	rugose.
— Subtus . . .	glaucous.
— Nerves . . .	setigerous.
Coral Tube . . .	scarcely longer than segments.
Calyx-Lobes . . .	oblong, rotundate.
Filaments . . .	central. (1 Pl.)
Shrub . . .	low.
Branches . . .	brown, glab. ligneous upwards.
— Shoots . . .	green hispid.
Leaves . . .	alternate and tufted terminal, long-lanceolate.
— Margin . . .	setaceous-serrulate, ciliate.
—— Serrulations .	subimbricate (on each other).
—— Sinus . .	rib 0.
—— Sides . .	(exterior) external, (interior) rib 0.
—— Vertices .	setaceous.
— Base . . .	long attenuated.
— Apex . . .	acute-angular, indurated.
— Surface . . .	sublinpid, subglaucous.
— Subface . . .	glab. glaucous.
— Axis . . .	prominent, setigerous.
— Branches & — Veins	level with parenchyma.
Inflorescence . . .	a simple, terminal umbel.
Pedicels . . .	green, puberent, ½ length of tube.
Bracteas . . .	leafy, at base of umbel.
Calyx . . .	puberent, 5-parted.
— Segments . . .	long!! linear!! obtuse, ciliate.
Coral . . .	5-fid.
— Tube . . .	½ as long as segments, subviscous, horizontally glandular-setaceous.
— Segments . . .	laticolate, linire, keeled, acuminate.
Stamens . . .	5, 3 longer and 2 shorter (sub = coral.)
Pistil . . .	rather exceeding coral.
— Ovary . . .	oblong, long white-haired, shorter than calyx.
— Style . . .	slender, filiform, glab.
— Stigma . . .	simple, (the thickened apex of style).
Floration . . .	15th July, 1831, at Mr. Knight's, King's Road, Chelsea.
Country . . .	N. America. Pennsylvania, New York.

1.

3.

2.

J Hart Del.

Pub. by J & A. Arch. Jan 1 1823.

Weddell Sc.

7.

SYMPHORIA RACEMOSA. (Mich. Fl.)

Racemed St. Peter's Wort.

Raceme . . .	*terminal.*
Corol	*bearded inside.* (Ph.) Coral.
Shrub	slender, twiggy.
Branches . . .	long, green, glab.
Petiole	very short, glab. hunched.
Leaves	opposite, ovate.
— Margin . . .	intire.
— Base . . .	ovate.
— Apex . . .	obtuse-angular.
— Surface . . .	glab.
— Subface . .	„ paler.
— Axis . . .	„
—— Branches .	vanishing into reticulations.
Flowers . . .	in opposite pairs along the branches.
Pedicels . . .	very short, glab.
Bracteas . . .	2 at base of each calyx, acute, and 2 at base of pairs, lanceolate, connate, = pedicel & smaller bracteas.
Calyx	glab. 5-dentate.
— Dents . . .	acute.
— Tube . . .	short.
Corol	glab. 5-fid.
— Segments . .	intire, obtuse, long-white-haired inside between the sinuses!
—— Sinus . .	narrow.
Stamens . . .	5, a little shorter than corol, inserted at its sinuses.
— Filaments . .	shortish, tapering.
— Anthers . .	oblong, medifixt.
—— Lobes . .	adhering, open at base.
Pistil	short, = $\frac{1}{2}$ length of corol.
— Ovary . . .	hid in the calyx (adhering).
— Style . . .	glab.
— Stigma . . .	simple, projecting, puckered.
Berry	(acrosarc) cream color, suborbicular, pulpy, crowned by persisting minute calyx, 2 celled.
—— Epicarp . .	diaphanous!
— Cells	1-seeded.
— Seeds . . .	elliptic, flat, white, placentated to partition of cells.
Floration . . .	August, 1821.
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	on the banks of the Missouri; on mountains near Lake Mistassins.
Dissection . . .	f. 1. corol cut open to shew the insertion of stamens and pubescence of the inside of corol. —2. Berry. —3. Seed.

7.

SYMPHORIA RACEMOSA. (Mich. Fl.)

Racemed St. John's Wort.

Flowers . . .	(rarely) dioecious.
Corol . . .	flexibly bell-shaped, (Pl.) Corol.
Stigma . . .	clavate, twice.
Bracteoles . . .	long, green, glab.
Petals . . .	very short, glab; bracted.
Leaves . . .	opposite, ovate.
— Margin . . .	entire.
— Base . . .	ovate.
— Apex . . .	obtuse-angular.
— Surface . . .	glab.
— Stalks . . .	" pale.
— Axis . . .	"
— Branches . . .	warping into reticulation.
Flowers . . .	in opposite pairs along the branches.
Pedicels . . .	very short, glab.
Bracteas . . .	Base of each calyx, acute, and 3 at base of pair, lanceolate, connate. = pedicel & smaller bracteas.
Calyx . . .	glab. 3-dentate.
— Dents . . .	acute.
— Tube . . .	short.
Corol . . .	glab. 5-lid.
— Segments . . .	little, oblong, long-white-barred inside between the sinuses!
— Sinus . . .	narrow.
Stamens . . .	5, a little shorter than corol, inserted at its sinuses.
— Filaments . . .	slender, capering.
— Anthers . . .	oblong, mucilic.
— Lobes . . .	adhering, open at base.
Pistil . . .	short. = ½ length of corol.
— Ovary . . .	hid in the calyx (adhering).
— Style . . .	glab.
— Stigma . . .	simple, projecting, pucketed.
Berry . . .	(acrokarc) crown color, subglobular, pulpy, crowned by persisting minute calyx. 3 celled.
— Epicarp . . .	diaphanous!
— Cells . . .	1-seeded.
— Seeds . . .	elliptic flat, white, placentated to partition of cells.
Flowering . . .	August 1821.
Place . . .	Messrs. Wurley and Co's, Fulham.
Country . . .	on the banks of the Missouri; on mountains near Lake Winnipeg.
Direction . . .	C. I. corol cut open to show the insertion of stamens and pubescence of the inside of corol. —2. Berry. —3. Seed.

8.

Del.

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8.

LYCIUM CHINENSE. (Dh. nov.)

Chinese Boxthorn.

Branches . . .	*diffuse, angulate.*
Leaves	*petiolate, lanceolate, acute.*
Calyx	*2-3-fid.*
Style	*scarcely longer than stamens.*
Berry	*ovate.* (Dh. nov.)
Shrub	bushy, pendant.
Branches . . .	yellow brown, 5-ribbed, running from each base of leaf.
Flowers	1-2 together, axillary on the branches to the end.
Pedicels . . .	$\frac{1}{2}$ inch, maculate.
Calyx	glab. shorter than tube of corol, 2-lobate, one segment 2-dentate.
Corol	1-petaled.
— Tube . . .	= segments.
— Segments . .	5, subimbricate at the divisions, lanceolate, obtuse, intire, glab.
— Mouth . . .	closed.
Stamens . . .	5, = corol, pubescent at base, inserted on middle of tube of corol.
— Filaments . .	glab. setaceous.
— Anthers . .	oblong, medifixt, glab.
—— Lobes . .	adnate.
Pistil	
— Ovary . . .	glab. shining, subconic, free.
— Style . . .	„ filiform, = stamens.
— Stigma . . .	large, 2-lobed, puckered.
Berry	oblong.
Petiole	short, sub 0, glab.
Leaves	in bundles under the flowers, alternate, oblong-lanceolate.
— Margin . . .	intire.
— Base & — Apex . .	acute.
— Surface . . .	glab.
— Subface . .	„ , atomic.
— Axis . . .	prominent.
—— Branches .	obsolete.
Floration . . .	30th June, 1821.
Place	Horticultural Society's Garden, Kensington.
Country . . .	The temperate provinces of China.
Dissection . . .	f. 1. calyx. —2. corol cut open to shew the stamens and pistil. —3. longitudinal section of the berry, to point out the placentation of the seeds. —4. a seed.

LYCIUM CHINENSE. (Dk. nov.)

Chinese Boxthorn.

Prickles . . .	diffuse, angulate.
Leaves . . .	petiolate, lanceolate, acute.
Calyx . . .	5-8-fid.
Berry . . .	ovate. (Dk. nov.)
Shrub . . .	bushy, pendant.
Branches . . .	yellow downy, 5-ribbed, running from each base of leaf.
Flowers . . .	1-2 together, axillary on the branches to the end.
Pedicels . . .	½ inch. smooth.
Calyx . . .	glab. shorter than tube of corol. 2-lobed, one segment 2-dentate.
Corol . . .	1-petalled.
— Tube . . .	= segments.
— Segments . . .	5, roundish at the extreme, marginate, citrine, latine glab.
— Mouth . . .	closed.
Stamens . . .	½ = corol, pubescent at base, inserted on middle of tube of corol.
— Filaments . . .	glab. subulate.
— Anthers . . .	oblong, medifixt, glab.
— Lobes . . .	adnate.
Pistil . . .	
— Ovary . . .	glab. shining, subconic, free.
— Style . . .	filiform, = stamens.
— Stigma . . .	large, 2-lobed, pubescent.
Berry . . .	oblong.
Petiole . . .	short, sub 0, glab.
Leaves . . .	in bundles under the flowers, alternate, oblong-lanceolate.
— Margin . . .	intire.
— Base & Apex . . .	acute.
— Surface . . .	glab.
— Subface . . .	" . atomic.
— Axis . . .	pronident.
— Branches . . .	obtuse.
Floration . . .	30th June, 1891.
Place . . .	The botanical Society's Garden, Wendington.
Country . . .	The temperate provinces of China.
Direction . . .	1. calyx. 2. corol cut open to shew the stamens and pistil. 3. longitudinal section of the berry, to point out the placentation of the seeds. 4. a seed.

1.

2.

J Hart. Del.

Pub. by J. & A. Arch. Cornhill. Feb 1 1823.

Weddell Sc.

9.

LYCIUM BARBARUM. (W.)

Waved-leaved Lycium.

Leaves	*alternate, lanceolate.*
Branches . . .	*dependent.*
Germs	*spinescent.*
Calyx	*sub 3-fid.*
Stamens . . .	*= limb of corol.* (W. E.)
Shrub	weak, decumbent, 4-6 F.
Stem & Branches } . .	pale brownish yellow, 5-ridged, glab.
Petiole	short, glab.
Leaves	in alternate bundles, thickish, soft, undulate, elliptic.
— Margin . . .	intire.
— Base . . .	rather vanishing into the petiole.
— Apex . . .	acute-angular.
— Surface . . .	glab. sprinkled with glaucous atoms.
— Subface . . .	paler.
— Axis	prominent, glab.
—— Branches .	fainter.
Inflorescence . .	2-4-flowered, axillary.
Peduncles . . .	thickening into the calyx, and rather longer than corol, glab.
Calyx	glab. papillose, subequally 5-dent.
— Dents . . .	obtuse-angular, white-edged.
—— Sinus . . .	acute.
Corol	rotate, 1 petaled, 5-fid.
— Tube . . .	rather longer than calyx.
— Segments . .	oblong, obtuse, emarginate.
—— Margin . .	white, ciliate!
— Mouth . . .	closed with hairs.
Stamens	5, rather longer than the corol, inserted at $\frac{1}{2}$ depth of tube and subdecurrent to its base.
— Filaments . .	slender, white, glab. hairy at insertion!
— Anthers . .	oblong, cordate, basifixt, white, glab.
—— Lobes . .	adnate, oblong, furrowed.
Pistil	rather longer than stamens.
— Ovary . . .	white, ovate, glab. free.
— Style . . .	filiform, glab.
— Stigma . . .	sub 2-lobed, longish, sericeous.
Berry	elliptic-pyriform, glab.
Floration . . .	26th July, 1822.
Place	Messrs. C. Loddiges and Sons', Hackney.
Country . . .	South of Europe.
Dissection . . .	f. 1. calyx cut and thrown back with pistil in the centre. —2. corol cut open and spread out, with insertion of stamens and position of the pistil.

9.

LYCIUM BARBARUM. (W.)

Barbadoes Lycium.

Leaves . . .	alternate, lanceolate.
Branches . .	divergent.
Thorns . . .	opposite.
Calyx . . .	5-tid.
Stamens . .	base of corol. (W. L.)
Shrub . . .	weak, decumbent. L. S.
Stem &c. . .	pale brownish yellow, 5-ridged, glab.
Branches . .	
Petals . . .	short, glab.
Leaves . . .	in alternate bundles, dioecious, sett, undulate, elliptic.
— Margin . .	entire.
— Base . . .	tetho, vanishing into the petiole.
— Apex . . .	acute-angular.
— Surface . .	pale, spinulose with glandless atoms.
— Subst. . .	pulpy.
— Axil . . .	geminate. glab.
— Branches .	tapering.
Inflorescence .	2-4-flowered, axillary.
Pedicles . .	thickening into the calyx, and rather longer than
	corol. glab.
Calyx . . .	glab. perilous, subregularly 5-dent.
— Teeth . .	ovate-angular, white-edged.
— Sinus . .	acute.
Corol . . .	rotate, 1 petaled, 5-lid.
— Tube . .	rather longer than calyx.
— Segments .	oblong, obtuse, crenulate.
— Margin . .	white, ciliate.
— Mouth . .	closed with hairs.
Stamens . .	5, rather longer than the corol, inserted a ½ depth
	of tube and adherent to its base.
— Filaments .	slender, white, glab. hairy at insertion.
— Anthers . .	oblong, cordate, bisilici, white, glab.
— Pollen . .	adunte, oblong, turgoid.
Pistil . . .	rather longer than stamens.
— Ovary . .	white, ovate, glab. 3-ca.
— Style . .	filiform, glab.
— Stigma . .	sub 2-lobed, longish, setaceous.
Berry . . .	ellipt-pyriform, glab.
Flowers . . .	26th July, 1839.
Place . . .	Messrs. C. Lodiges and Sons', Hackney.
Country . . .	South of Europe.
Dissection . .	1. L. calyx cut and thrown back with pistil in the centre.
	—2. corol cut open and spread out, with insertion of stamens and position of the pistil.

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10.

BUMELIA CHRYSOPHYLLOIDES. (P.)

Silvery-leaved Bumelia.

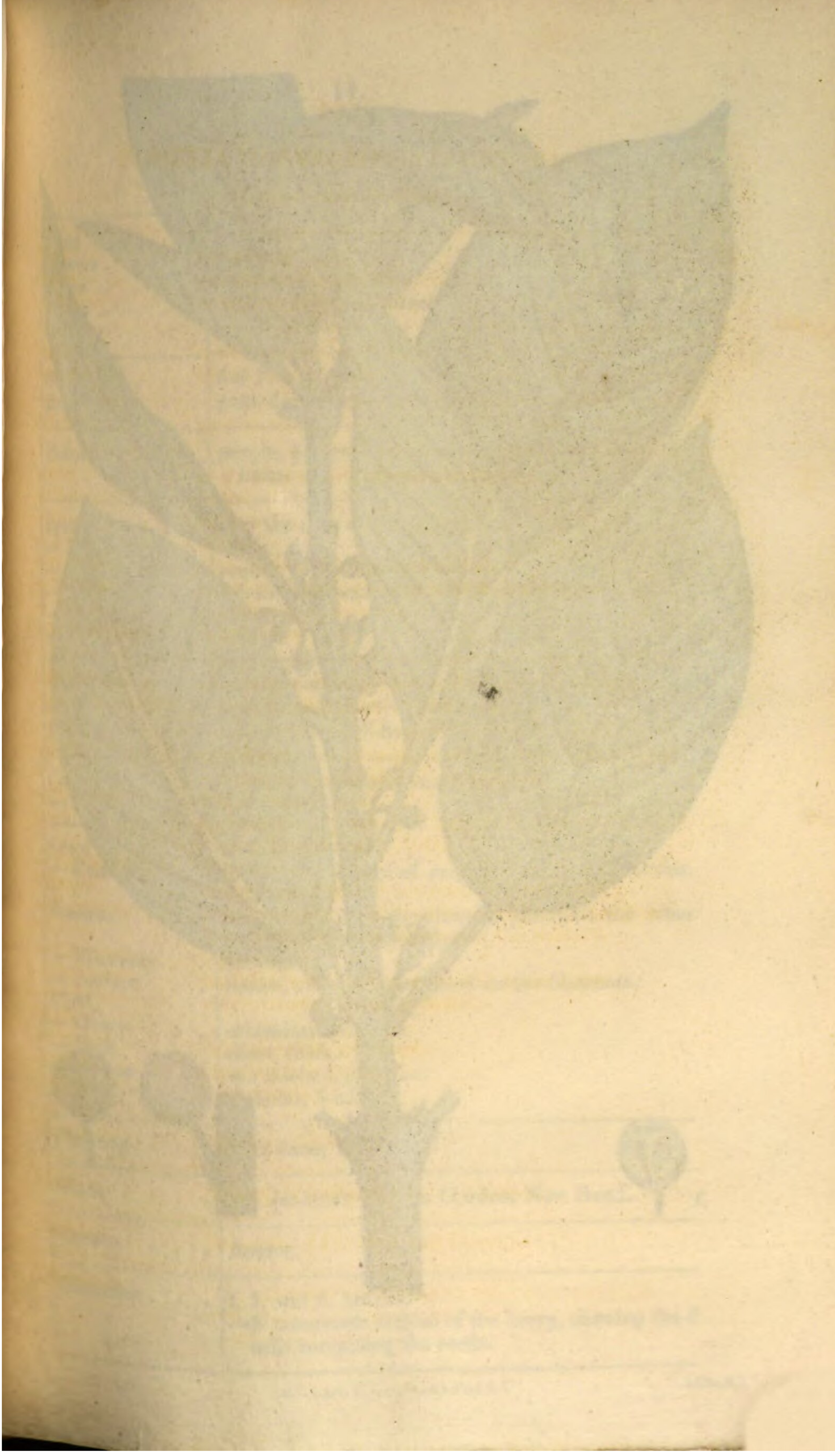
Plant	*subspinose.*
Leaves	*cuneate-lanceolate, obtuse.*
— Subface . .	*satiny, shining.* (Ph.)
Shrub	weak, spinous, 8-10 F.
Branches . . .	brown, warty, glab.
Petiole	very short.
Leaves	in bundles of 3-4, obovate-lanceolate.
— Margin . . .	intire.
— Base . . .	cuneate.
— Apex . . .	obtuse.
— Surface . . .	glab. rather shining, reticulated.
— Subface . .	paler, yellowish, covered with a dense satin.
— Axis	prominent, pubescent.
— Branches .	subobsolete, „
Inflorescence . .	alternate, sessile, simple, 8-10-flowered, umbels.
Rays of Umbels .	$\frac{1}{3}$ inch, thicker above, pubescent.
Calyx	ventricose, coriaceous, covered with adpressed hairs, inequally and obtusely 5-fid.
— Segments . .	2 outer and 3 inner.
Corol	coriaceous, 1 petaled, longer than the calyx, inequally divided, 8-10-fid.
— Segments . .	obtuse.
Nectary . . .	amalgamated with inner coat of corol, 5-fid.
— Segments . .	obtuse-angular, with membranous waved margins.
Stamens . . .	5, = corol, inserted between it and nectary.
— Filaments . .	tapering.
— Anthers . .	medifixt, with cordate base and acute apex.
— Lobes . .	very narrow, adnate, grooved.
Pistil.	
— Ovary . . .	free, globular, sericeous.
— Style . . .	tapering to a point.
— Stigma . . .	0 apparent.
Floration . . .	9th Sept. 1822.
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	Sea-coast of Carolina and Georgia.
Dissections . .	f. 1. calyx cut open to show the ovary and style. —2. corol laid open presenting the nectary, stamens, and corol.

10.

EUNELIA CHRYSOPHYLLOIDES. (P.)

Silvery-leaved Eunelia.

Plant . . .	subepiscose.
Leaves . . .	cuneate-lanceolate, sublate.
— Surface . . .	tarnish, shining. (Pl.)
Shrub . . .	stark, spinous, 8-10 f.
Branches . . .	brown, warty, glab.
Petiole . . .	very short.
Leaves . . .	in tundles of 3-4, obovate-lanceolate.
— Margin . . .	entire.
— Base . . .	cuneate.
— Apex . . .	obtuse.
— Surface . . .	glab, rather shining, veined.
— Subleaves . . .	paler yellowish, covered with a deciduous skin.
— Axils . . .	prominent, pubescent.
— Branches . . .	subfasciculate.
Inflorescence . . .	alternate, sessile, simple, 8-12-flowered, umbels.
Rays of Umbels . . .	½ inch, thickly glutinous, pubescent.
Calyx . . .	tubular-campanulate, covered with adpressed hairs internally and obtusely 5-lob.
— Segments . . .	3 outer and 3 inner.
Corol . . .	hypocrateriform, 1 petaled, longer than the calyx, in equally divided, 8-10-fid.
— Segments . . .	obtuse.
Anthers . . .	amalgamated with inner coat of corol, 5-fid.
— Segments . . .	obtuse-angular, with membranous sinuses and margins.
Stamens . . .	5, = corol, inserted between it and the ovary.
— Filaments . . .	adpressed.
— Anthers . . .	sagittate, with cordate lobes and acute apex.
— Lobes . . .	very narrow, adnate proximal.
Pistil . . .	
— Ovary . . .	free, globulary, pubescent.
— Style . . .	tapering to a point.
— Stigma . . .	0 apparent.
Flowering . . .	Feb-Sept. 1892.
Place . . .	Messrs. Wilkey and Co's, Fulham.
Country . . .	Sea-coast of Carolina and Georgia.
Dissections . . .	f. 1. calyx cut open to show the ovary and style. —2. corol laid open preserving the nectary, stamens and corol.



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11.

RHAMNUS LATIFOLIUS. (W.)

Broad-leaved Buckthorn.

Plant	*unarmed.*
Flowers	*1-gynous, bisexual.*
Calyx	*villous.*
Leaves	*elliptic, intire, acuminate.*
— Base . . .	*rounded.* (W. E.)
Shrub	6-8 F.
Branches . . .	glab. dark purple-brown, with white atoms.
Petiole	purple, $\frac{1}{3}$=length of leaf, covered with projecting hairs.
Leaves	near the tops of the shoots, alternate, elliptic.
— Margin . . .	intire.
— Base . . .	round.
— Apex . . .	subobtusely acuminate.
— Surface . . .	glab.
— Subface . .	„
— Axis	very prominent, pubescent.
—— Branches .	simple, parallel, „
Inflorescence . .	axillary, about 8-flowered.
Calyx	pubescent, campanulate, 5-dentate.
— Segments . .	acute-angular.
—— Sinus . . .	„
Corol	5-petaled.
— Petals . . .	inserted at sinuses of calyx and shorter, orbicular, intire.
Stamens . . .	5, inserted near the claws of petals on the inner fleshy part of the calyx.
— Filaments . .	very short.
— Anthers . .	brown, oblong, transversed on the filaments.
Pistil.	
— Ovary . . .	orbicular, sericeous.
— Style . . .	short, thick.
— Stigma . . .	sub 2-lobed, globular.
Berry	globular, 3-celled.
Floration . . .	19th June, 1821.
Place	Mr. Jenkins's Botanic Garden, New Road.
Country . . .	Azores.
Dissection . . .	f. 1. and 2. berries. —3. transverse section of the berry, showing the 3 cells containing the seeds.

11.

12.

ITEA VIRGINICA. (W.)

Virginian Itea.

E.D.Smith.Del. Pub.by J.&A.Arch.Cornhill.Feb.1.1823. Weddell.Sc.

12.

ITEA VIRGINICA. (W.)

Virginian Itea.

Leaves	*oblong, serrate.*
Spike	*pubescent.* (Ph.)
Shrub	low, erect.
Stem	cylindric, glab.
Branches . . .	pubescent.
Petiole	very short, reddish, flattened above, pubescent.
Leaves	alternate, elliptic-lanceolate.
— Margin . . .	serrulate.
—— Serratures .	small.
——— Sinus . .	acute.
——— Sides . .	(exterior) excurved, (interior) sub 0.
——— Vertices .	fleshy.
— Base . . .	attenuated.
— Apex . . .	obtusely acuminate.
— Surface . . .	glab.
— Subface . .	(parenchyma) glab.
— Axis & —— Branches	prominent, few-haired.
Spikes	3-inch, axillary and terminal.
Peduncles . . .	reddish, pubescent.
Pedicels . . .	„ „ , short.
Calyx	glab. 5-fid.
— Segments . .	tapering to an acute point.
—— Sinus . . .	obtuse.
Corol	5-petaled.
—Petals . . .	fixed on the calyx, rather longer than stamens, intire, acute.
—— Base . . .	pubescent.
Stamens . . .	5, between the petals, inserted at base of each segment of calyx.
— Filaments . .	tapering.
—— Base . . .	pubescent.
— Anthers . .	cordate.
—— Lobes . .	(not sulcate).
Pistil	= stamens.
— Ovary . . .	flask-shaped, horizontally pubescent, with a faint line each side.
— Style . . .	= length of ovary, glab.
— Stigma . . .	simple, rather projecting, fungous.
Floration . . .	6th August, 1821.
Place	Arboretum, Kew.
Country . . .	Pennsylvania to Carolina.

12.

ITEA VIRGINICA (*W.*)

Virginian Itea.

Leaves . . .	ovate, acuminate.
Spike . . .	lanceolate. (Pl.)
Sharp . . .	one-sided.
Stem . . .	cylindric-club.
Branches . . .	spreading.
Petals . . .	very short, scarcely distinct above, pubescent.
Leaves . . .	alternate, elliptic-lanceolate.
— Margin . . .	serrulate.
— Petioles . . .	small.
— Stem . . .	acute.
— Sides . . .	(calcine) excurrent-decurrent with it.
— Veins . . .	Main.
— Base . . .	rounded.
— Apex . . .	obtusely acuminate.
— Surface . . .	glab.
— Stalks . . .	(pericladium) glab.
— Axis & Branches }	pubescent. Tri-lateral.
Spike . . .	Short, axillary and terminal.
Peduncles . . .	twinish, pubescent.
Pedicels . . .	" " short.
Calyx . . .	glab. 5 fid.
— Segments . . .	tapering to an acute point.
— Sinus . . .	obtuse.
Corol . . .	5-petaled.
— Petals . . .	Keel one-line valley, rather longer than connate.
— Base . . .	tapering.
Stamens . . .	5 between the petals inserted at base of each segment of calyx.
— Filaments . . .	tapering.
— Base . . .	pubescent.
— Anthers . . .	ovulate.
— Lobes . . .	(not aplicate).
Pistil . . .	= stamens.
— Ovary . . .	thick-clavel, horizontally pubescent, with a faint line each side.
— Style . . .	= length of ovary, glab.
— Stigma . . .	simple, rather prismatic, longer than connate.
Glandulæ . . .	ob. Angust. 1821.
Fruit . . .	Arboretum, Exav.
Capsule . . .	Pennsylvania to Carolina.

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13.

VITIS RIPARIA. (Mich. Fl.)

Sweet-scented Vine.

Leaves	*inequally incised-dentate, rather shortly 3-fid.*
Petioles, Nerves & Margin . .	*pubescent.* (Ph.)
Shrub	twining.
Petiole	= $\frac{2}{3}$ length of leaf, pubescent, red.
Leaves	alternate, sub 3-lobate, cirrhose.
— Section . . .	shallow.
— Lobes . . .	acute, dentate.
—— Dents . .	obtuse-angular.
——— Sinus . .	acute.
——— Sides . .	bowform.
——— Vertices .	indurated.
— Base . . .	deeply cordate.
— Apex . . .	acuminate.
— Faces . . .	glab.
— Nerves . . .	pubescent, 5 principal ones from a point at base of leaf, branched and reticulated.
Racemes . . .	alternate, opposite to the leaves.
Peduncles & Pedicels .	glab.
Bracteas . . .	brown, 2 dentate.
Calyx	very short, faintly scolloped.
Corol	5-petaled.
— Petals . . .	obtuse, intire, united at tips!
Stamens . . .	5, inserted under the ovary.
— Filaments . .	flat.
— Anthers . .	submedifixt.
—— Lobes . .	wholly adnate.
Pistil.	
— Ovary . . .	round, free.
— Style . . .	0.
— Stigma . . .	puckered.
Floration . . .	19th June, 1821.
Place	Mr. ——— Knight's, King's Road, Chelsea.
Country . . .	on the gravelly shores and islands of rivers, Pennsylvania to Carolina.

VITIS RIPARIA. (*Mich.* Fl.)

Sweet-scented Vine.

Leaves . . .	inequally ﬁve-lobed-dentate, rather shortly 3-ﬁd.
Petioles, Nerves & Margin	[illegible]
Shrub . . .	twining.
Petiole . . .	= ½ length of leaf, pubescent, red.
Leaves . . .	alternate, sub-3-lobate, cordate.
— Sepals . . .	ovate.
— Lobes . . .	acute, dentate.
— Disk . . .	obtuse-angular.
— Stamens . . .	acute.
— Styles . . .	bowed.
— Ovules . . .	inflexed.
— Base . . .	deeply cordate.
— Apex . . .	acuminate.
— Faces . . .	glab.
— Nerves . . .	pubescent, 5 principal ones ligneous, pale at base of leaf, branched and reticulated.
Racemes . . .	alternate, opposite to the leaves.
Peduncles & Petioles	glab.
Bracteas . . .	brown, 2 deciduous.
Calyx . . .	very short, 5-toothed, scolloped.
Corol . . .	5-petaled.
— Petals . . .	oblong-lanceolate, united at tips.
Stamens . . .	5, inserted under the ovary.
— Filaments . . .	flat.
— Anthers . . .	subsagittate.
— Lobes . . .	widely subulate.
Pistil.	
— Ovary . . .	conical, free.
— Style . . .	½.
— Stigma . . .	pubescent.
Flowering . . .	15th June, 1854.
Place . . .	Mr. ——— Rugeley, King's Road, Chelsea.
Country . . .	on the gravelly shores and islands of rivers, Pennsylvania to Carolina.

J.Hart.Del. Pub.by J.&A.Arch.Cornhill.Feb.1.1823. Weddell.Sc.

14.

BUPLEURUM FRUTICOSUM. (W.)

Shrubby Hare's Ear.

Leaves	*lanceolate-obovate, very intire, sessile.* (W.)
Shrub	subherbaceous, branched.
Stem & Branches . .	glab. cylindric.
Leaves	alternate, sessile, obovate-lanceolate.
— Margin . . .	intire, cartilaginous.
— Base . . .	rather tapering, and inserted on the stem.
— Apex . . .	obtuse.
— Faces . . .	glab.
— Axis	subprominent, glab.
—— Branches .	0.
—— Veins . .	reticulated.
Inflorescence . .	a compound umbel.
Umbel	generally 5-rayed, $1\frac{1}{4}$ inch.
— Umbelet . .	13-many rayed, shorter and regular.
—— Rays . . .	of both glab. obsoletely lirate.
Involucre . . .	5-folioled, reflected.
— Folioles . .	lanced, acute.
—— Margin . .	membranous, intire.
—— Faces . .	glab.
Involucret . . .	many folioled, and like those of the involucre.
Calyx	sub 0.
Corol	5-petaled.
— Petals . . .	involute.
Stamens . . .	5, short, inserted under the disk.
— Filaments . .	short, = anthers.
— Anthers . .	obcordate, basifixt.
—— Lobes . .	(not grooved).
Disk	convex, covering the ovary.
Pistil.	
— Ovary . . .	below the disk.
— Style . . .	0.
— Stigma . . .	very small.
Seeds	2, glab. obtusely lirate-striate.
Floration . . .	6th Aug. 1821.
Place	Arboretum, Kew.
Country . . .	South of France and the East.
Dissection . . .	f. 1. a separate flower.

BUTLERUM FRUTICOSUM. (W.)

Sterbby Hope's Jour.

Leaves . . .	dodecahedro-oblong, very finely, areolate. (W.)
Sheath . . .	subfibrobaceous, bipunctal.
Branches . . .	glab. cylindric.
Leaves . . .	alternate, sessile, oblongo-lanceolate.
— Margin . . .	entire, cartilaginous.
— Base . . .	rather tapering, and inserted on the stem.
— Apex . . .	obtuse.
— Faces . . .	glab.
— Axis . . .	subprominent, glab.
— Branches . . .	0.
— Veins . . .	reticulated.
Inflorescence . . .	a compound umbel.
Umbel . . .	terminal, 5-rayed, 1½ inch.
— Umbelets . . .	11-many-rayed, shorter and regular.
— Rays . . .	0. Bract, glab. obsoletely lirate.
Involucre . . .	5-foliolate, reflexed.
— Folioles . . .	lanceol. acute.
— Margin . . .	membranous, entire.
— Faces . . .	glab.
Involucret . . .	many foliolate, and like those of the involucre.
Calyx . . .	sub 0.
Corol . . .	5-petaled.
— Petals . . .	involute.
Stamens . . .	5, short, inserted under the disk.
— Filaments . . .	short, = anthers.
— Anthers . . .	obcordate, basifixt.
— Lobes . . .	(not proved).
Disk . . .	convex, covering the ovary.
Fruit . . .	
— Ovary . . .	below the disk.
— Style . . .	2.
— Stigma . . .	very small.
Seeds . . .	2, glab. obtusely lirate-striate.
Flowering . . .	6th Aug. 1821.
Face . . .	Arboretum, Kew.
Country . . .	South of France and the East.
Discussion . . .	L. l. a separate flower.

J Hart Del.

Pub.by I.& A Arch. Cornhill. Feb 1 1823.

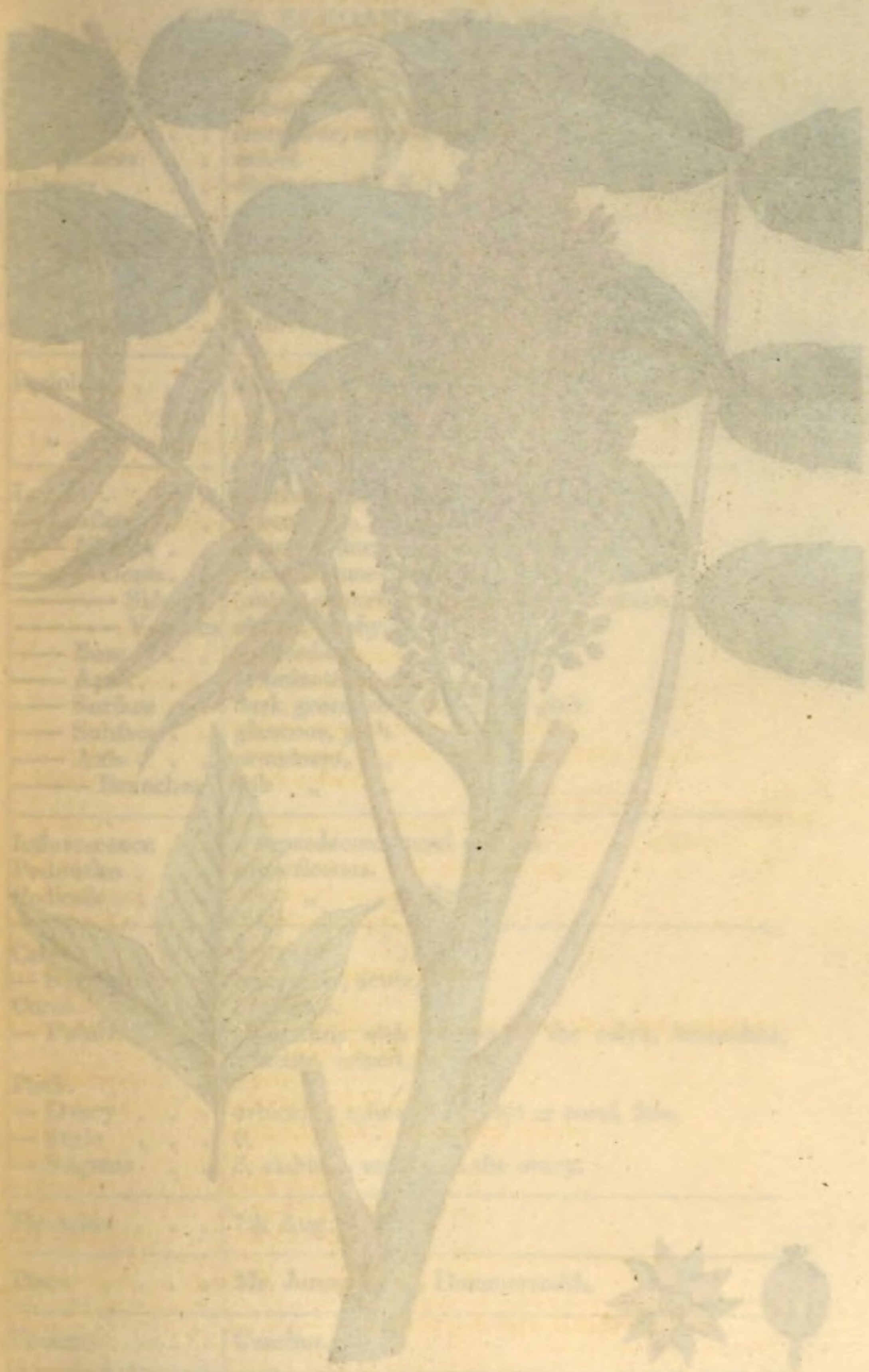
Wed 2 H.S.

15.

RHUS GLABRUM. (W.)

Smooth Sumac.

Plant	*intirely glab.*
Leaves	*many-paired-pinnate.*
Leaflets . . .	*lanceolate-oblong, serrate.*
— Subface . .	*whitish.*
Fruit	*holosericeous.* (Ph.)
Shrub	10-12 F.
Branches . . .	hunched, glandular, warty.
Petiole	(common), 14 inch.
„	(foliolar) glab. very short.
Leaves	alternate, impair-pinnate, $8\frac{1}{2}$ pair.
— Leaflets . .	ovate-lanceolate.
—— Margin . .	serrate.
——— Serratures	obtuse-angular.
———— Sinus .	„
———— Sides .	excurved.
———— Vertices	naked.
—— Base . . .	ovate.
—— Apex. . .	acuminate.
—— Surface . .	dark green, glab. plicate.
—— Subface . .	glaucous, „
—— Axis . . .	glab. prominent.
——— Branches	„ subopposite.
Raceme . . .	supercompound, erect, terminal.
Peduncles . . .	continuous with the branches, short haired.
Pedicels . . .	short-haired.
Bracteas . . .	numerous, setaceous, scarious.
Calyx	5-fid, covered with short hairs.
— Segments . .	lanceolate, acute.
—— Sinus . .	obtuse-angular.
Corol	5-petaled.
— Petals . . .	elliptic, concave, acute.
—— Claw . . .	very short.
Stamens . . .	shorter than petals, inserted on the calyx under the edge of the disk.
— Filaments . .	short.
— Anthers . .	orbicular, 2-lobed.
Disk.	thin, circular, subcrenate, yellow.
Pistil.	
— Ovary . . .	glab. free.
— Style . . .	0, or very short.
— Stigma . . .	2-3, clavate.
Floration . . .	20th Aug. 1821.
Place	Mr. ——— Knight's, King's Road, Chelsea.
Country . . .	New England to Carolina.
Dissection . . .	f. 1. flower as seen from above with the stamens and stigma. —2. ovaries swelling into fruit.



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16.

RHUS ELEGANS. (W.) (Female.)

Scarlet Sumach.

Leaves	*pinnate.*
— Leaflets . .	*lanceolate, serrate.*
—— Faces . .	*naked.*
Flowers	*dioicous.* (H. K.)
Shrub	7-8 F.
Stem.	
— Bark . . .	pale brown, glab. warty.
— Branches . .	glab.
Petiole	(common) 13 inch, purplish green, glab. lirate-sulcate.
„	(foliolar) sub 0.
Leaves	alternate, impair-pinnate, $8\frac{1}{2}$ pairs.
— Leaflets . .	subcordate, long-lanceolate.
—— Margin . .	remotely dentate.
——— Dents . .	short, obtuse-angular.
———— Sides .	(outer) excurved, (inner) short, straitish.
———— Vertices	obtuse, fleshy.
—— Base . . .	subcordate.
—— Apex . . .	acuminate.
—— Surface . .	dark green, rather shining, glab.
—— Subface . .	glaucous, glab.
—— Axis . . .	prominent, „
——— Branches	sub „ „
Inflorescence . .	a superdecompound raceme.
Peduncles . . .	subsericeous.
Pedicels . . .	„ , = flower.
Calyx	5 parted.
— Segments . .	lanceolate, acute.
Corol	5 petaled.
— Petals . . .	alternating with sinuses of the calyx, lanceolate, acute, veined, sericeous.
Pistil.	
— Ovary . . .	orbicular, crimson-velvety! = corol, free.
— Style . . .	0.
— Stigmas . .	3, clubbed, sessile on the ovary.
Floration . . .	7th Aug. 1822.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Carolina.
Dissection . . .	f. 1. coral as seen from above with the central disk and site of ovary. —2. ovary changing to fruit.

16.

LILIUS ELEGANS. (W.) (Female)
Stem 3 feet.

Flowers	
Inflorescence	
Peduncle	
Calyx	
— Segments	lanceolate, acute.
Corol	6 petaled.
— Petals	alternating with sinuses of the calyx, lanceolate, acute, veined, reclinate.
Pistil	
— Ovary	orbicular, cilaceo-ribbed = corol, free.
— Style	0.
— Stigma	3, clubbed, sessile on the ovary.
Fruiting	Feb. June 1859.
Plant	
— Habit	Mr. Jones Feb. Lancewoodth.
Country	Carolina.
Description	C. 1. corol as seen from above with the central dark area of ovary. — K. ovary changing to drop.

Pl 17.

I Hart Del.

Pub. by J. & A. Arch. Cornhill. March. 1 1823.

Wedgwood Sc.

17.

RHUS TYPHINUM. (W.)

Virginian Sumach.

Plant	*subarborescent.*
Branches & Petioles . .	*very villous.*
Leaves	*many-pair-pinnate.*
— *Leaflets* . .	*lanceolate-oblong, sharply serrate.*
—— *Subface* . .	*subtomentose.* (Ph.)
Shrub	10-12 F. branching.
Branches . . .	cylindric, herbaceous, densely covered with horizontal hairs, intermixed with minute scarlet atoms.
Petiole	(common) 1 F. densely covered with horizontal hairs.
,, ...	(foliolar) 0.
Leaves	alternate, impair-pinnate.
— Leaflets . .	subcordate, long-lanceolate, $10\frac{1}{2}$ pair.
—— Margin . .	closely adprest-serrate.
——— Serratures	short.
——— Sinus .	acute.
——— Sides .	(exterior) excurved, (interior) sub 0.
——— Vertices	naked.
—— Base . . .	intire, subcordate.
—— Apex . .	,, , acuminate.
—— Surface . .	glab.
—— Subface . .	paler, with whitish, close, projecting hairs.
—— Axis & ——— Branches	prominent, white-haired.
Inflorescence . .	spicate-racemose, compound, $9\frac{1}{2}$ inches.
— Spikes . . .	about 30.
— Racemes . .	compound, about 2 inches.
Peduncles . . .	(primary and secondary) cylindric, densely covered with horizontal hairs.
— Pedicels . .	very short.
Bracteas . . .	at base of pedicels, linear, pubescent.
Calyx	pubescent, 5-parted.
— Segments . .	lanceolate, acute.
—— Margin . .	ciliate with long white hairs.
Corol	5-petaled, inserted between bases of segments of calyx.
— Petals . . .	obovate-lanced, subsericeous, tinged rose-color at apices, twice as long as the calyx.

—— Margin . .	intire.
Stamens . . .	5, shorter than the petals, inserted on the edge of a small, thin, brown, 5-lobed disk, at base of segments of calyx.
— Filaments . .	= anthers, flat, tapering.
— Anthers . .	elliptic, basifixt.
—— Lobes . .	adnate, oblong, grooved.
Pistil.	
— Styles . . .	2, short.
— Stigma . . .	purple, clubbed.
Floration . . .	2d July, 1822.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Canada to Virginia.
Dissection . .	f. 1. calyx. —2. corol as seen from above. —3. ovary and stigma detached.

E.D.Smith. Del.

Pub. by J. & A. Arch. Cornhill. March 1 1823.

Weddell Sc.

18.

RHUS TYPHINUM. (Female.)

Virginian Sumach.

Shrub	8-10 F.
Branches . . .	covered with dense, horizontal, and reflected pubescence.
Petiole	(common), horizontally pubescent.
„	(foliolar), sub 0.
Leaves	alternate, impair-pinnate.
— Leaflets . .	opposite, sessile, $8\frac{1}{2}$ pair, ovate-lanceolate.
—— Margin . .	serrate.
——— Serratures	obtuse-angular.
———— Sinus .	acute.
———— Sides .	both excurved.
———— Vertices	naked.
—— Base . . .	ovate, 1 side protruded.
—— Apex. . .	long-acuminate.
—— Surface . .	glab.
—— Subface . .	paler, pubescent.
—— Axis . . .	prominent, reddish, pubescent.
——— Branches.	„ alternate, „
Spike	compound, 3-5 inches.
Perigone . . .	5-parted, long-haired.
— Segments . .	lanceolate, acute.
Pistil.	
— Ovary . . .	flat, broader than high, densely covered with long purple hairs.
— Style . . .	0.
— Stigma . . .	2, sessile, oblong, brown, lirate.
Floration . . .	10th Aug. 1821.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Canada to Virginia.
Observation.	
Tree	18 F. with suborbicular head.
— Stem . . .	7 F.
— Epidermes .	glab. lead-brown.
	(At Messrs. Rolls and Son's, King's Road.)

18.

RHUS TYPHINUM. (Female)

Virginian Sumach.

RIVA VERDE

Enrico Corradini

1.

2.

J. Hart. Del.

Pubby. J. & A. Arch. Cornhill. March. 1823.

Weddell Sc.

19.

RHUS VERNIX. (W.)

Varnish Sumach.

Plant	*arborescent.*
Leaves	*many-pair-pinnate.*
— Leaflets . .	*oval, abruptly acuminate, intire.*
Panicle	*lax.*
Flowers	*dioicous. (bisexual in my specimen).*
Fruit	*glab.* (Ph.)
Shrub	upright, 5-6 F.
Branches . . .	brown, glab., warty.
— Branchlets .	purplish.
Petiole	(common) purple, glab., 6 inches.
„	(foliolar) sub 0.
Leaves	alternate, impair-pinnate.
— Leaflets . .	elliptic, $5\frac{1}{2}$ pair.
—— Margin . .	very intire (subsinuous).
—— Base . . .	rather tapered.
—— Apex. . .	acuminate.
—— Surface . .	glab. shining.
—— Subface . .	set with short, thick, gland-like, fleshy hairs.
—— Axis . . .	prominent, glab.
——— Branches	alternate, vanishing.
Raceme . . .	axillary, compound, slender, erect, 6 inches.
— Racemules .	alternate.
Peduncles & Pedicels .	covered with very short, fine, hooked hairs.
Bracteas . . .	at branching of pedicels, small, acute.
Calyx	glab. 5-parted.
— Segments . .	lanceolate, acute.
—— Margin . .	intire.
—— Sinus . . .	acute.
Corol	5-petaled.
— Petals . . .	alternating with segments of calyx, linear-lanceolate, intire.
Stamens . . .	5, longer than petals, inserted on the calyx under the edge of the disk.
— Filaments . .	glab. subulate.
— Anthers . .	yellow, elliptic, basifixt.
—— Lobes . .	adnate, grooved.
Disk	circular, waxy, thickish, intire.

Pistil	½ length of stamens.
— Style . . .	very short, thick.
— Stigma . . .	3, small.
Floration . . .	17th June, 1822.
Place	Mr. Rollinson's, Tooting.
Country . . .	Canada to Carolina.
Dissection . . .	f. 1. Calyx, corol, and stamens. —2. disk, ovary, style and stigma, with one stamen, to shew the insertion—also a segment of calyx and a petal.

20.

VIBURNUM NUDUM. (W.)

Deal-leaved Viburnum.

Plant . . .	glab.
Stem . . .	cylindric, pedunculate.
Petiole . . .	short.
Leaves . . .	oval.
— Margin . . .	revolute, subciliate.
Berry . . .	blackish. (Pk.)
Shrub . . .	erect.
Branches . . .	cylindric, brown, warty.
Petiole . . .	short, sparsely with brown atoms, grooved above.
Leaves . . .	opposite, elliptic.
— Margin . . .	minutely bordered with a pellucid membrane.
— Base . . .	rather tapered.
— Apex . . .	obtuse.
— Surface . . .	glab. shining.
— Stalkes . . .	„ covered with reddish spangles.
— Axils . . .	prominent } all covered with brown atoms.
— Branches . . .	vanishing }
Umbel . . .	pedunculated, compound.
— Rays . . .	spaced with solitary hairs and brown scales.
Calyx . . .	tubular, strewed with brown scales, 5-dentate.
— Dents.	
— Margin . . .	obscurely-ciliate.
— Sinus . . .	acute.
Corol . . .	1-petaled, 5-6-fid.
— Segments . . .	ovate, intire, basis imbricating each other.
Stamens . . .	5, longer than corol, inserted at base of its tube, under each sinus.
— Filaments . . .	zig-zag.
— Anthers . . .	oblong, medifix.
— Lobes . . .	adnate, sulcate.
Pistil . . .	short.
— Ovary . . .	(the free part) glab. conic, ½ adhering.
Floration . . .	26th July, 1891.
Place . . .	Mr. James Lee's, Hammersmith.
Country . . .	Canada to Georgia.

VIBURNUM LENTAGO. (W.)

Tree Viburnum.

E.D.Smith Del. Pub.by J.&A.Arch. Cornhill. March1823. Weddell Sc.

20.

VIBURNUM NUDUM. (W.)

Oval-leaved Viburnum.

Plant	*glab.*
Cymes	*ebracteate, pedunculate.*
Petioles . . .	*short.*
Leaves	*oval.*
— Margin . . .	*revolute, subintire.*
Berry	*black.* (Ph.)
Shrub	erect.
Branches . . .	cylindric, brown, warty.
Petiole	short, sparsed with brown atoms, grooved above.
Leaves	opposite, elliptic.
— Margin . . .	intire, bordered with a pinkish membrane.
— Base . . .	rather tapered.
— Apex . . .	obtuse.
— Surface . . .	glab. shining.
— Subface . .	„ , covered with reddish spangles.
— Axis	prominent } all covered with brown atoms.
—— Branches .	vanishing }
Umbel	pedunculated, compound.
— Rays . . .	sparsed with solitary hairs and brown scales.
Calyx	tubular, strewed with brown scales, 5-dentate.
— Dents.	
—— Margin . .	lacerate-ciliate.
—— Sinus . .	acute.
Corol	1-petaled, 5-6-fid.
— Segments . .	ovate, intire, bases imbricating each other.
Stamens . . .	5, longer than corol, inserted at base of its tube, under each sinus.
— Filaments . .	zig-zag.
— Anthers . .	oblong, medifixt.
—— Lobes . .	adnate, sulcate.
Pistil	short.
— Ovary . . .	(the free part) glab. conic, ½ adhering.
Floration . . .	24th July, 1821.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Canada to Georgia.

20.

VIBURNUM NUDUM (W.)

Oval-leaved Viburnum.

Plant	glab.
Cyme	rhomboid-pedunculate.
Petiole . . .	short.
Leaves . . .	oval.
— Margin . . .	revolute, undulate.
Berry . . .	black. (Pl.)
Shrub	erect.
Branches . . .	cylindric, brown, warty.
Petiole . . .	short, sparsely with brown atoms, grooved above.
Leaves . . .	opposite, elliptic.
— Margin . . .	minute, bordered with a pinkish membrane.
— Base . . .	rather tapered.
— Apex . . .	obtuse.
— Surface . . .	glab. shining.
— Stalkes . . .	„ covered with reddish specks.
— Axis . . .	prominent, all covered with brown atoms.
— Branches . .	ramifying,
Cymal	pedunculated, compound.
— Rays . . .	spaced with solitary hairs and brown scales.
Calyx	tubular, strewed with brown scales, 5-dentate.
— Dents.	
— Margin . . .	lacerate-ciliate.
— Sinus . . .	acute.
Corol	1-petaled, 5-6-fid.
— Segments . .	ovate, intire, bases imbricating each other.
Stamens . . .	5, longer than corol, inserted at base of its tube, under each sinus.
— Filaments . .	zig-zag.
— Anthers . .	oblong, mutilat.
— Lobes . . .	adnate, sulcate.
Pistil	short.
— Ovary . . .	(the free part) glab. conic, ½ adhering.
Floration . . .	25th July, 1891.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Canada to Georgia.

E.D.Smith Del. Pub.by.J.& A.Arch.Cornhill.March.1.1823. Weddell Sc.

21.

VIBURNUM LENTAGO. (W.)

Tree Viburnum.

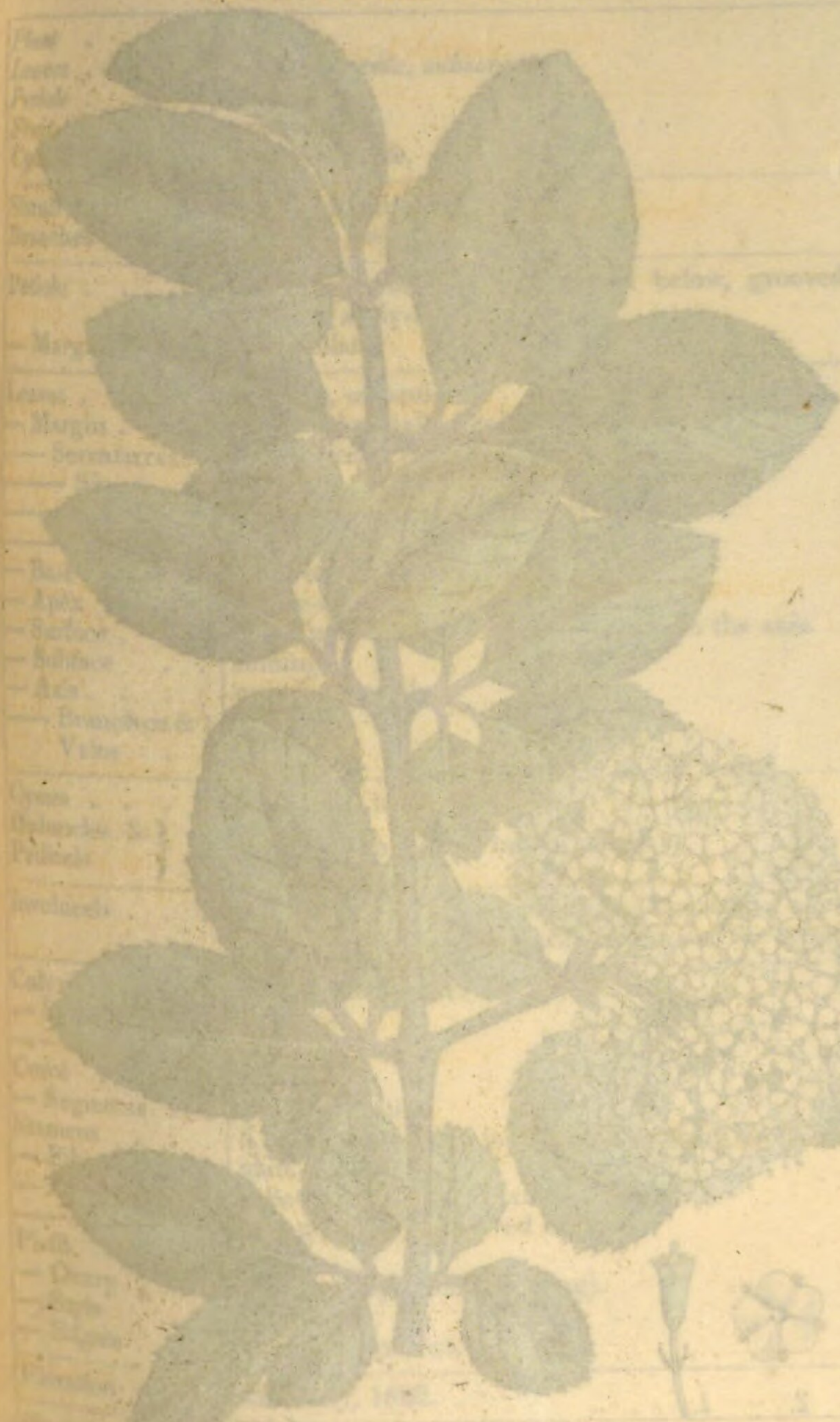
Plant	*glab.*
Cymes	*sessile.*
Petioles . . .	*marginate, undulate.*
Leaves	*broad-ovate, acuminate, hooked-serrate.*
Berry	*black.* (Ph.)
Shrub	6 F.
Branches . . .	pale-brown, glab.
Petiole	long, with undulate margin!
Leaves	opposite, ovate-elliptic-lanceolate.
— Margin . . .	hooked-serrate.
—— Serratures.	
——— Sinus . .	obtuse.
——— Sides . .	(exterior) bowed outwards, (interior) incurved.
——— Vertices .	curved inwards.
— Base . . .	= & in =.
— Apex . . .	acuminate.
— Faces . . .	glab.
— Axis . . .	prominent.
—— Branches .	alternate.
Cymes	sessile.
Peduncles & Pedicels .	herbaceous, strewed with brown atoms.
Involucre . . .	only a rudiment.
Calyx	short, 5-parted.
— Segments . .	oblong, obtuse, intire.
Corol	5 parted.
— Segments . .	obtuse, intire, glab.
Stamens . . .	5, shorter than corol, inserted at its base below each sinus.
— Filaments . .	short.
— Anthers . .	oblong, medifixt, 4-alate.
Pistil.	
— Ovary . . .	obconic.
— Stigma . . .	puckered.
Floration . . .	June, 1821.
Place	Messrs. Colvill and Son's, King's Road, Chelsea.
Country . . .	New England to Carolina.

21.

VIBURNUM LENTAGO. (*W.*)

Tree Viburnum.

Plant . . .	glab.
Petioles . . .	marginate, undulate.
Leaves . . .	broad-ovate, acuminate, border-serrate.
Berry . . .	black. (Pitt.)
Shrub . . .	6 F.
Branchlets . . .	pale-brown, glab.
Petiole . . .	long, with undulate margin!
Leaves . . .	opposite, ovate-elliptic-lanceolate.
— Margin . . .	hooked-serrate.
— Stipules . . .	obtuse.
— Petioles . . .	(exterior) bowed outwards, (interior) nearly
— Vertices . . .	curved inwards.
— Base . . .	=. & in =.
— Apex . . .	acuminate.
— Faces . . .	glab.
— Axis . . .	perennial.
— Branches . . .	alternate.
Cymes . . .	sessile.
Pedunculus & Pedicels	. . . herbaceous, striated with brown ribs.
Involucre . . .	only a rudiment.
Calyx . . .	short, 5-parted.
— Segments . . .	oblong, obtuse, ciliate.
Corol . . .	5 parted.
— Segments . . .	obovate, entire, glab.
Stamens . . .	5, shorter than the corol, inserted at its base between each sinus.
— Filaments . . .	short.
— Anthers . . .	oblong, medifixt, 4-slate.
— Ovary . . .	obconic.
— Stigma . . .	puckered.
Fructification . . .	June, 1821.
Place . . .	Messrs. Colvill and Son's, King's Road, Chelsea.
Country . . .	New England to Carolina.



Pl. 22.

2. 1.

I. Hart. Del. Pub. by J. & A. Arch. Cornhill. March 1 1823. Waddell Sc.

22.

VIBURNUM PYRIFOLIUM. (Lam. Enc.)

Pear-leaved Viburnum.

Plant	*glab.*
Leaves	*ovate, subacute, subserrate.*
Petiole	*smooth.*
Fruit	*ovate-oblong.*
Cyme	*subpedunculate.* (Ph.)
Shrub	much spreading, 4-5 F.
Branches	cylindric, glab., purplish.
Petiole	= $\frac{1}{4}$ length of leaf, red, round below, grooved above, scaly-atomed.
— Margin	subundulate.
Leaves	opposite, orbicular.
— Margin	finely and equally hooked-serrulate.
— Serratures	subimbricate, reddish.
— Sinus	obtuse.
— Sides	(exterior) excurved, (interior) very small.
— Vertices	naked.
— Base	ovate or subcordate.
— Apex	obtuse-angular.
— Surface	glab. (not shining) with scaly atoms on the axis.
— Subface	shining.
— Axis	prominent, glab.
— Branches & Veins	obsolete.
Cymes	lateral and terminal, sessile.
Peduncles & Pedicels	sparsed with minute brown points.
Involucels	3-4, very small, tinged rose-color, lanceolate, acute and minuter ones at the subdivisions of the cymes.
Calyx	subtubulate, rather rigid, 5-fid.
— Segments	truncate.
— Sinus	obtuse.
Corol	5-parted.
— Segments	orbicular, intire.
Stamens	5, = corol, inserted in its mouth at each sinus.
— Filaments	glab. white.
— Anthers	yellow, oblong, medifixt.
— Lobes	adnate, oblong, grooved at sides.
Pistil	short.
— Ovary	$\frac{1}{2}$ hid in calyx (semiadhering).
— Style	very short.
— Stigma	scarcely apparent.
Floration	22d May, 1822.
Place	Messrs. Whitley and Co's., Fulham.
Country	Pennsylvania, New Jersey, &c.
Dissection	f. 1. calyx, part of the style and stigma. —2. corol as seen from above, with insertion of stamens.

VIBURNUM PYRIFOLIUM. (*Linn. Enc.*)

Pear-leaved Viburnum.

Plant . . .	glab.
Leaves . . .	ovate, subacute, subserrate.
Petiole . . .	short.
Fruit . . .	ovate-oblong.
Corol . . .	white (Pitt.)
Shrub . . .	much branching, 4-6 ft.
Branches . . .	cylindric, glab, purplish.
Petiole . . .	= ½ length of leaf, red, ground below, grooved above, glab.
— Margin . . .	subserrulate.
Leaves . . .	opposite, orbicular.
— Margin . . .	finely and equally bicalcarate-serrulate.
— Serratures . . .	rectangular, reclined.
— Sides . . .	(between) exquisitely (fine size) very small.
— Base . . .	truncate, subcordate.
— Apex . . .	obtuse, mucronulate.
— Surface . . .	(both sides alike) wide scaly glands on the axils.
— Subface . . .	whitish.
— Axis . . .	pubescent, red.
— Branches & Veins	glab.
Cymes . . .	large and compact, sessile.
Peduncles & Pedicels	pubescent with minute brown points.
Involucels . . .	(none) exquisitely (fine size) very small.
Calyx . . .	glab.
— Segments . . .	ovate, acute, reflexed.
Corol . . .	(Pitt.)
— Segments . . .	ovate, obtuse, reflexed.
Stamens . . .	exserted.
— Filaments . . .	glab.
— Anthers . . .	yellow.
— Pollen . . .	white.
Pistil . . .	glab.
— Ovary . . .	ovate, glab.
— Style . . .	short, glab.
— Stigma . . .	capitate.
Flowering . . .	April, 1822.
Place . . .	Messrs. Whitley and Co's., Fulham.
Country . . .	Pennsylvania, New Jersey, &c.
Direction . . .	1. calyx, part of the style and stigma. 2. corol as seen from above, with insertion of stamens.

VIBURNUM PRUNIFOLIUM. (W.)

Plum-leaved Viburnum.

Plant	*glab.*
Branches . . .	*spreading.*
Leaves	*subrotund, crenate-serrate.*
Petiole	*smooth.*
Cyme	*sessile.*
Fruit	*rotund.* (Ph.)
Shrub	bushy, 10 F.
Branches . . .	brown, cylindric, glab.
Petiole	red, short, glab., furrowed above.
Leaves	alternate, orbicular and elliptic.
— Margin . . .	remotely incurved-serrulate.
—— Serratures .	acute.
——— Sinus . .	sub 0, obtuse.
——— Sides . .	(exterior) subrotund, (interior) sub 0.
——— Vertices .	acute, indurated.
— Base . . .	rotund.
— Apex . . .	broad-acuminate.
— Surface . . .	deep green, shining.
— Subface . .	glab. covered with pale dots.
— Axis	prominent.
—— Branches .	(first) prominent, rebranching and anastomosing with the veins.
Cyme	sessile.
Peduncles & Pedicels .	herbaceous, glab.
Bracteas . . .	minute, brown, acute.
Calyx	glab. long, 5-fid. grooved from the sinuses.
— Segments . .	= tube of corol, acute, intire.
—— Sinus . . .	obtuse.
Corol	glab. short, 5-parted.
— Segments . .	obtuse-angular, intire.
Stamens . . .	5, sub=corol, inserted in and embodied with it below the sinuses.
— Filaments . .	long, tapering.
— Anthers . .	subrotund, medifixt.
—— Lobes . .	adhering.
Pistil.	
— Ovary . . .	subconic.
— Style . . .	0.
— Stigmas . .	3-lobed (3-rounded projections).
Floration . . .	21st June, 1821.
Place	T. Canham's, Esq. Twickenham.
Country . . .	New England to Carolina.

VIBURNUM PRUNIFOLIUM (W.)

Plum-leaved Viburnum.

E.D.Smith.Del. Pub.by J&A Arch.Cornhill. March 1.1823. Weddell Sc.

24.

VIBURNUM SQUAMATUM. (W. E.)

Scaly Viburnum.

Leaves	*oblong, obtuse, serrulate.*
Petiole & Peduncle . .	*squamose-pubescent.* (W. E.)
Shrub	6-8 F.
Branches . . .	cylindric, pale-brown, glab.
Petiole	short, scaly, hollow above from decurrence of the leaf.
Leaves	opposite, elliptic.
— Margin . . .	crenate-subdentate.
—— Dents . .	obtuse.
——— Sinus . .	"
——— Vertices .	naked.
— Base . . .	ovate.
— Apex . . .	obtuse-acuminate.
— Surface . . .	glab. with scaly axis.
— Subface . .	farinose-scaly.
— Axis	prominent, scaly.
—— Branches & —— Veins	sunk in the parenchyma.
Cyme	terminal, pedunculated.
Peduncles & Pedicels .	green, covered with minute ferruginous scales.
Bracteas . . .	irregular, membranous, sheathing the base of florets.
Calyx	long.
— Tube . . .	= ½ length of corol.
— Segments . .	short, acute.
—— Sinus . . .	obtuse.
Corol	1-petaled, 5-fid.
— Tube . . .	short.
— Segments . .	acute-angular, intire, revolute.
—— Sinus . .	acute-angular.
Stamens . . .	twice as long as corol, inserted at its base and not adnate to it upwards.
— Filaments . .	slender, filiform.
— Anthers . .	oblong, transversed.
Pistil.	
— Ovary . . .	filling the calyx and semiadhering.
— Style . . .	short (sub 0).
— Stigma . . .	simple, scarcely apparent.
Floration . . .	21st June, 1821.
Place	T. Canham's, Esq. Twickenham.
Country . . .	Pennsylvania.

94.

VIBURNUM SQUAMATUM. (W. E.)

Scaly Viburnum.

Leaves . . .	oblong, obtuse, serrulate.
Petiole & Peduncle }	squamose-puberous. (W. E.)
Stem . . .	6-8 F.
Branches . . .	cylindric, pale-brown, glab.
Petiole . . .	short, scaly, hollow above from decurrence of the leaf.
Leaves . . .	opposite, elliptic.
— Margin . . .	crenate-subdenticulate.
— Base . . .	obtuse.
— Sinus . . .	..
— Vertices . . .	naked.
— Disc . . .	ovate.
— Apex . . .	obtuse-acuminate.
— Surface . . .	glab. with scaly axis.
— Subtus . . .	minutely scaly.
— Axis . . .	prominent, scaly.
— Petiole & Petiolules }	sulcate, scaly.
— Veins . . .	6-7 pair.
— Veinlets . . .	obscure.
Cyme . . .	terminal, pedunculated.
Peduncles & Pedicels }	green, covered with minute ferruginous scales.
Bracteas . . .	irregular, membranous, sheathing the base of florets.
Calyx . . .	loose.
— Tube . . .	= ½ length of ovul.
— Segments . . .	short, acute.
— Limb . . .	obtuse.
Corol . . .	5-petaled, 6-fid.
— Tube . . .	short.
— Segments . . .	acute-angular, keeled, reclexed.
— Stamens . . .	acute-angular.
Stamens . . .	twice as long as corol, inserted at its base and not adnate to it upwards.
— Filaments . . .	slender, filiform.
— Anthers . . .	oblong, transversal.
Pistil.	
— Ovary . . .	filling the calyx and connadhering.
— Style . . .	short (sub 0).
— Stigma . . .	simple, scarcely dilated.
Flowering . . .	21st June, 1851.
Place . . .	T. Cubbin's, Esq. Twickenham.
Country . . .	Pennsylvania.

J.Hart.Del.

Pub.by.J.&A.Arch.Cornhill.April.1.1823.

Weddell.Sc.

25.

VIBURNUM DENTATUM. (W.)

Toothed-leaved Viburnum. (Arrow wood.)

Plant	*subglab.*
Leaves	*suborbicular and ovate, acute, dentate-serrate, plicate-sulcate.*
— *Faces* . . .	*glab.*
Cyme	*pedunculate.*
Fruit	*subglobular.* (Ph.)
Shrub	4-5 F.
Branches . . .	cylindric, brown.
Petiole	short, = $\frac{1}{6}$ length of leaf, grooved above.
Leaves	opposite, suborbicular.
— Margin . .	largely dentate.
—— Dents . .	acute.
——— Sinus . .	obtuse.
——— Sides . .	rather excurved.
——— Vertices .	callous.
— Base . . .	subcordate.
— Apex . . .	obtuse-angular.
— Surface . . .	shining, with solitary hairs.
— Subface . .	glab.
— Nerves . . .	very prominent and solitarily long-haired.
—— Branches .	2-furcate.
—— ∠ s . . .	hair-tufted.
Cyme	compound.
Peduncles & Pedicels	strewed with solitary white hairs and brown atoms.
Calyx	fleshy, cylindric, 5-dentate, strewed with brown minute scales.
— Dents . . .	acute.
—— Margin . .	gland-ciliate.
—— Sinus . .	obtuse.
Corol	5-fid.
— Segments . .	obtuse, subintire.
Stamens . . .	5, longer than corol, and inserted at its base.
— Filaments . .	glab. rather tapering.
— Anthers . .	subhastate, medifixt.
—— Lobes . .	oblong, grooved, adnate.
Pistil	shorter than corol.
— Ovary . . .	hid in the calyx.
— Style . . .	short, hairy at base.
— Stigma . . .	3, small, subexcurved.
Floration . . .	21st June, 1822.
Place	Mr. James Lee's, Hammersmith.
Country . . .	New York to Carolina.

26.

BERBERRIS SINENSIS. (H. P.)

Chinese Barberry.

Leaves	*lanceolate-obovate, submucronate, more or less dentate.*
Raceme . . .	*axillary, suberect.* (Dh. Nov.)
Shrub	bushy.
Stem & Branches . .	glab. brown, lirate-sulcate.
Spines	½ inch flat, tapering, keeled.
Petiole	short, the decurrence of the base of leaf.
Leaves	in alternate bundles, obovate, spatulate.
— Margin . . .	intire.
— Base . . .	long-spatulate.
— Apex . . .	obtuse.
— Faces . . .	glab. reticulate-veined.
— Axis	prominent, glab.
—— Branches .	fainter.
Inflorescence . .	a simple axillary and terminal raceme.
Peduncles & — Pedicels .	green, glab.
Bracteas . . .	one at base of pedicels, semilanceolate, acute, and two at base of flowers.
Calyx	6-sepaled.
— Sepals . . .	colored, glab. intire, dilated.
Corol	6-petaled.
— Petals . . .	subrhomboid, emarginate, glab. intire, each with 2 oblong nectaries at base.
Stamens . . .	6, shorter than petals and = pistil, inserted at base of ovary.
— Filaments . .	flat.
— Anthers . .	2, adnate to apex of filaments.
—— Lobes . .	oblong, grooved.
Pistil.	
— Ovary . . .	cylindric, glab.
— Style . . .	0.
— Stigma . . .	glab. broader than the ovary.
—— Margin . .	recurved.
—— Centre . .	a quadrangular excavation.
Floration . . .	21st June, 1821, at T. Canham's, Esq. Twickenham.
Country . . .	China.

E.D.Smith.Del.

Pub.by.J.&A.Arch.Cornhill.April.1.1823.

Weddell.Sc.

27.

PRINOS GLABER. (W.)

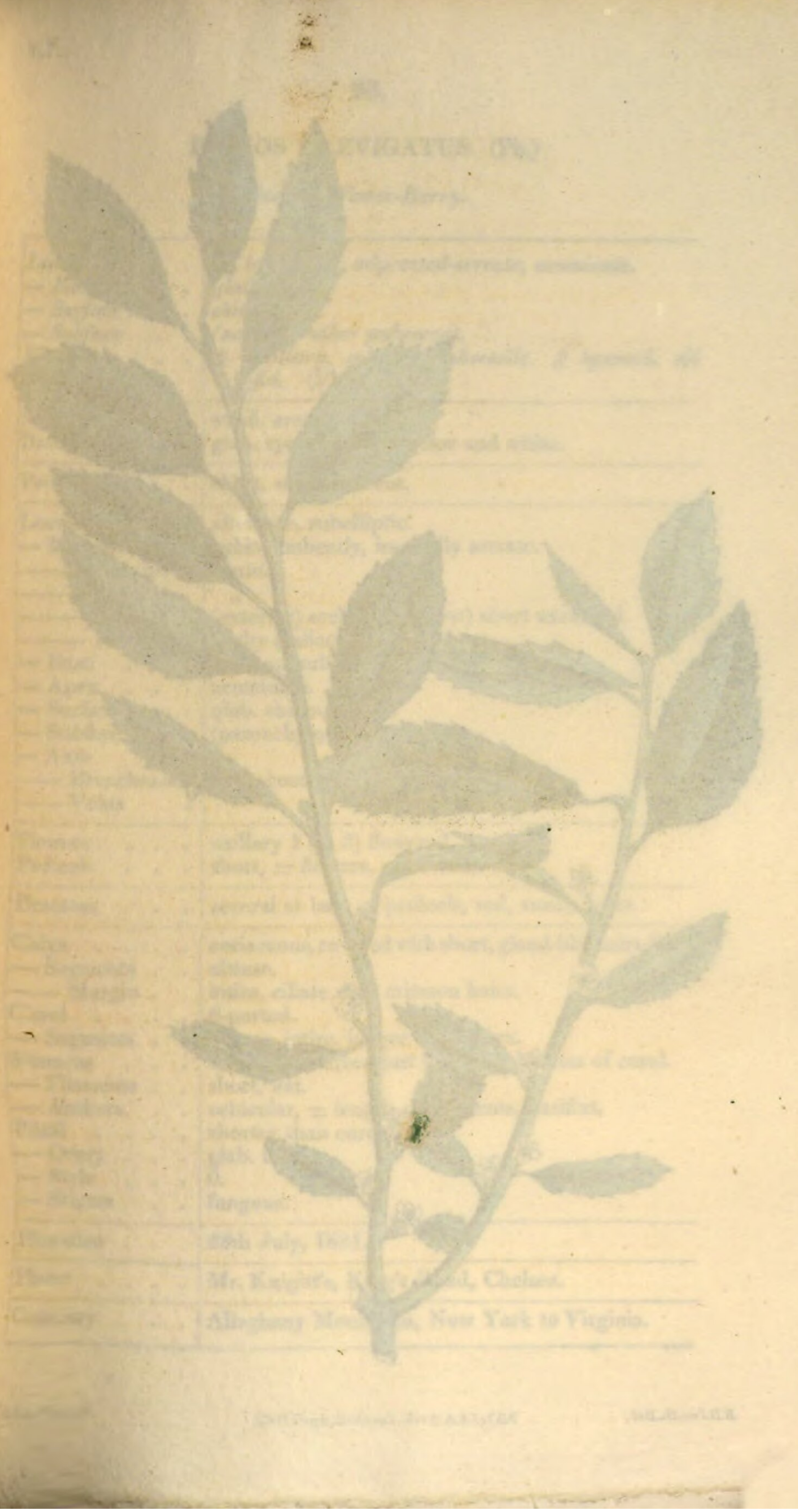
Evergreen Winter Berry. (Ink Berry.)

Pedicels . . .	*axillary, subsolitary, and generally 3-flowered.*
Berries	*black.*
Leaves	*perennial cuneate-lanceolate, coriaceous, glab. shining, upper part subdentate.* (Ph.)
Shrub	small, upright.
Stem	with green bark.
— Branches . .	covered with very short hairs.
Petiole	short, set with short gland-hairs.
Leaves	alternate, coriaceous, thick, lanceolate.
— Margin . . .	subserrate at end.
—— Serratures .	1-2 each side.
——— Vertices .	obtuse.
— Base . . .	attenuated.
— Apex . . .	obtuse-angular.
— Surface . .	glab. shining.
— Subface . .	(parenchyma) glab. and closely set with flat atoms.
— Axis	obtuse.
—— Branches .	0.
Inflorescence.	
Flowers	axillary, solitary or in 3-4 flowered umbels or corymbs.
Peduncles . . .	$\frac{3}{4}$ inch, covered with very short hairs.
— Pedicels . .	glab.
Bracteas . . .	several on the pedicels, very small, acute.
Calyx	glab. 6-fid.
— Segments . .	obtuse-angular, intire.
—— Sinus . .	acute.
Corol	1-petaled, 6-fid.
— Segments . .	obtuse.
—— Margin . .	short, lacerate, reflected.
Stamens . . .	6, rather shorter than corol, inserted just below sinuses of corol.
— Filaments . .	flat.
Pistil.	
— Ovary . . .	globular, free.
— Style . . .	0.
— Stigma . . .	very short.
Floration . . .	28th July, 1821.
Place	Mr. ——— Knight's, King's Road, Chelsea.
Country . . .	Canada to Florida.

PRINOS GLABER. (W.)

Evergreen Black-Berry. (Ink Berry.)

Pedicels . . .	small, subsolitary, and generally 3-flowered.
Sepals . . .	short.
Leaves . . .	petioled, ovate-lanceolate, coriaceous, glab. shining above, very finely subdentate. (Pb.)
Stamb . . .	small, purplish.
Stem . . .	with green bark.
— Branches . . .	covered with very short hairs.
Pedicels . . .	short, set with short gland-hairs.
Leaves . . .	alternate, persistent, thick, lanceolate,
— Margin . . .	subcrenate at top.
— Serratures . . .	laid back.
— Veins . . .	obtuse.
— Base . . .	attenuated.
— Apex . . .	obtuse mostly.
— Surface . . .	glab. shining.
— Stalks . . .	(sometimes) glab. and closely set with flat atoms.
— Axils . . .	obtuse.
— Branches . . .	G.
Inflorescence.	
Flowers . . .	axillary, solitary, or in 3-4 flowered umbels or cymules.
Peduncles . . .	4 lines, covered with very short hairs.
— Pedicels . . .	glab.
Bracteas . . .	several on the pedicels, very small, acute.
Calyx . . .	glab. 5-fid.
— Segments . . .	obtuse-angular, ciliate.
— Sinus . . .	acute.
Corol . . .	1-petaled, 5-fid.
— Segments . . .	obtuse.
— Margin . . .	short, incurved, reflected.
Stamens . . .	5, rather shorter than corol, inserted just below sinuses of corol.
— Filaments . . .	flat.
Pistil.	
— Ovary . . .	globular, free.
— Style . . .	0.
— Stigma . . .	very short.
Flowering . . .	25th July, 1821.
Place . . .	Mr. ——— Keighley's, King's Road, Chelsea.
Country . . .	Canada to Florida.



28.

PRINOS LAEVIGATUS. (Ph.)

Smooth Winter-Berry.

Leaves	⊙, *lanceolate, adpressed-serrate, acuminate.*
— *Faces*	*glab.*
— *Surface*	*shining.*
— *Subface*	*(nerves) rather pubescent.*
Flowers	♀ *axillary, solitary, subsessile.* ♂ *sparsed, all 6-fid.* (Ph.)
Shrub	small, erect.
Branches	glab. speckled olive-color and white.
Petiole	short, subpubescent.
Leaves	alternate, subelliptic.
— Margin	subincumbently, inequally serrate.
—— Serratures	acute.
—— Sinus	,,
—— Sides	(exterior) arched, (interior) short excurved.
—— Vertices	fleshy (callous), in some long.
— Base	ovate or subangular, intire.
— Apex	acuminate.
— Surface	glab. shining.
— Subface	(parenchyma) glab.
— Axis, —— Branches & —— Veins	pubescent with gland-hairs.
Flowers	axillary 1 (to 3) flowered.
Pedicels	short, = flowers, pubescent.
Bracteas	several at base of pedicels, red, small, acute.
Calyx	coriaceous, covered with short, gland-like hairs, 6-fid.
— Segments	obtuse.
—— Margin	intire, ciliate with crimson hairs.
Corol	6-parted.
— Segments	obtuse, intire, longer than calyx.
Stamens	6, short, inserted just below each sinus of corol.
— Filaments	short, flat.
— Anthers	orbicular, = length of filaments, basifixt.
Pistil	shorter than corol.
— Ovary	glab. free.
— Style	0.
— Stigma	fungous.
Floration	28th July, 1821.
Place	Mr. Knight's, King's Road, Chelsea.
Country	Alleghany Mountains, New York to Virginia.

I. Hart Del. Pub. by J. & A. Arch. Cornhill. April. 1. 1823. Waddell Sc.

29.

PRINOS AMBIGUUS. (W.)

Deciduous Winter-Berry.

Leaves	⊙, *oval.*
— *Apices* . . .	*acuminate.*
— *Margin* . . .	*mucronate-serrulate.*
— *Faces* . . .	*pubescent.*
Flowers	*4-5-fid.*
—— ♂	*congested at top of branchlets.*
—— ♀	*solitary.* (Ph.)
Shrub	low, erect.
Branches . . .	brown, glab.
Petiole	short, grooved, tomentose above.
Leaves	sparsed in bundles towards the ends of shoots, alternate, subovate.
— Margin . . .	subimbricate-serrate.
—— Serratures .	acute.
——— Sinus . .	,,
——— Sides . .	(exterior) excurved, (interior) short.
——— Vertices .	brown, short mucrones.
— Base	attenuate.
— Apex	acuminate, mucronate.
— Surface . . .	glab. few-haired near the base.
— Subface . . .	(parenchyma) glab.
— Axis & —— Branches	prominent, pubescent at sides.
Umbels	2-3-flowered, axillary and terminal, sparsed along the branches.
— Involucrets .	only denticulations at base of umbellule.
Calyx	glab. 5-fid.
— Segments . .	acute-angular, sublaciniated and ciliated with red hairs.
—— Sinus . . .	obtuse.
Corol	6-parted, glab.
— Segments . .	concave, obtuse, intire.
Stamens . . .	6, rather shorter than corol, inserted at its base
— Filaments . .	glab. rather tapering, flattish.
— Anthers . .	basifixt, oblong.
—— Base . . .	cordate.
—— Lobes . .	adnate, furrowed.
Pistil.	
— Ovary . . .	glab. conic.
— Style . . .	0.
— Stigma . . .	0 (or a shallow lobation of apex of ovary).
Floration . . .	16th July, 1821.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Canada to Virginia.

Leaves . . .	[illegible]
— Form . . .	[illegible]
— Apex . . .	pubescent.
Flower . . .	4-5-fid.
— of . . .	compound at top of branches.
— [illegible]	solitary. (Fl.)
Sepals . . .	[illegible] green.
Petals . . .	[illegible] white, glab.
Fertile . . .	stamens grooved, longer than ovary.
Leaves . . .	[illegible] in bundles towards the ends of shoots, al-
	ternate, subovate.
— Serratures .	acute.
— Sinus . .	"
— Sides . .	(exterior) recurved, (interior) short.
— Vertices .	[illegible] obscure, glandiferous.
— Disc . . .	[illegible].
— Apex . . .	acuminate, recurvate.
— Surface . .	glab. [illegible] under the lens.
— Subface . .	(parenchyma) glab.
— Axis of	[illegible] glabrous at sides.
— Branches	
Umbels . . .	3-4 flowered, axillary and [illegible], spread along
	the branches.
— Involucre .	[illegible]
— Stems . .	obtuse.
Corol . . .	6-parted, glab.
— Segments .	concave, oblong, retuse.
Stamens . .	6, rather shorter than corol, inserted at its base.
— Filaments .	glab, rather superior, flattish.
— Anthers . .	[illegible], oblong.
— Disc . . .	[illegible].
— Lobes . .	oblong, furrowed.
[illegible] . .	[illegible]
— Ovary . . .	glab, conic.
— Style . . .	0.
— Stigma . . .	0 (or a shallow lobation of apex of ovary).
Flowering . . .	16th July, 1821.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Canada to Virginia.

PRUNUS VIRGINIANA (W.)

Choke Cherry.

J. Hart Del.

Pub. by J. & A. Arch. Cornhill. April 1. 1823.

Weddell. Sc.

30.

PRINOS VERTICILLATUS. ♂ (Mich. Fl.)

Carolina Winter-Berry.

Fascicles . . .	*♂ flowers axillary, umbelluliform.*
„ . . .	*♀ flowers aggregate, generally 6-parted.*
Flowers	*small, white.*
Berries	*red or crimson.*
Leaves	*⊙, oval, serrate, acuminate.*
— Subface . .	*pubescent.* (Ph.)
Shrub	2-3 F.
Branches . . .	glab. dark brown.
Petiole	short, hunched, pubescent.
Leaves	towards ends of shoots, alternate, lanceolate.
— Margin . . .	remotely subserrulate.
— Serrulations	tipt with little, indurated, obtuse points.
— Base . . .	attenuated.
— Apex . . .	„ , acute-angular, mucronate.
— Surface . . .	glab.
— Subface . . .	pubescent.
— Nervation . .	strewed with white, divaricated, fleshy hairs.
Umbel	4-6-flowered, simple, pedicelled, sparsed on the shoots below the leaves.
Peduncles & — Rays .	green, glab.
Calyx	5-fid, lower part agglutinated to the corol.
— Segments . .	4-fid, acute.
— Sinus . . .	obtuse-angular.
Corol	glab. 3-4-parted.
— Segments . .	elliptic, concave, intire.
Stamens . . .	3-4 (not 6) = segments of corol, inserted at base of flower.
— Filaments . .	glab. sublinear.
— Anthers . .	„ basifixt, subrotund.
— Lobes . .	oblong, adnate, furrowed.
Pistil. — Ovary . . .	0 (or a glab. rudiment in some flowers).
Floration . . .	16th July, 1821.
Place	Mr. James Lee's, Hammersmith.
Country . . .	New Jersey to Carolina.

30.

PRINOS VERTICILLATUS, ♀ (Mich. fl.).

Carolina Winter-Berry.

Panicles . . .	♂ flowers sessile, umbellulate.
" . . .	♀ flowers sessile, pedicelled.
Flowers . . .	small, white.
Berries . . .	red or crimson.
Leaves . . .	○, oval, acute, serrate.
Surface . . .	pubescent. (?)
Stamens . . .	2-3 F.
Branches . . .	lab. dark brown.
Petals . . .	short, lanceol. pubescent.
Leaves . . .	scarcely rude of shoots, alternate, lanceolate.
— Margin . . .	remotely subcrenulate.
— Stipulations . . .	tipt with hair, indurated, obtuse point.
— Base . . .	attenuated.
— Apex . . .	acute-angular, mucronate.
— Surface . . .	glab.
— Nerves . . .	pubescent.
— Nervules . . .	crowded with white, divaricated, fleshy hairs.
Umbel . . .	6-flowered, simple, pedicelled, spaced on the shoots below the leaves.
Peduncle & Rays	green, glab.
Calyx . . .	5-fid, lower part agglutinated to the corol.
— Segments . . .	4-fid, acute.
— Sinus . . .	obtuse-angular.
Corol . . .	glab. 3-4-parted.
— Segments . . .	elliptic, concave, intire.
Stamens . . .	3-4 (not 6) = segments of corol, inserted at base of flower.
— Filaments . . .	glab. nodulose.
— Anthers . . .	,, basifixt, subcordated.
— Lobes . . .	oblong, adnate, furrowed.
Pistil.	
— Ovary . . .	0 (or a glab. rudiment in some flowers).
Flowering . . .	16th July, 1821.
Place . . .	Mr. James Lee's, Hammersmith.
Country . . .	New Jersey to Carolina.

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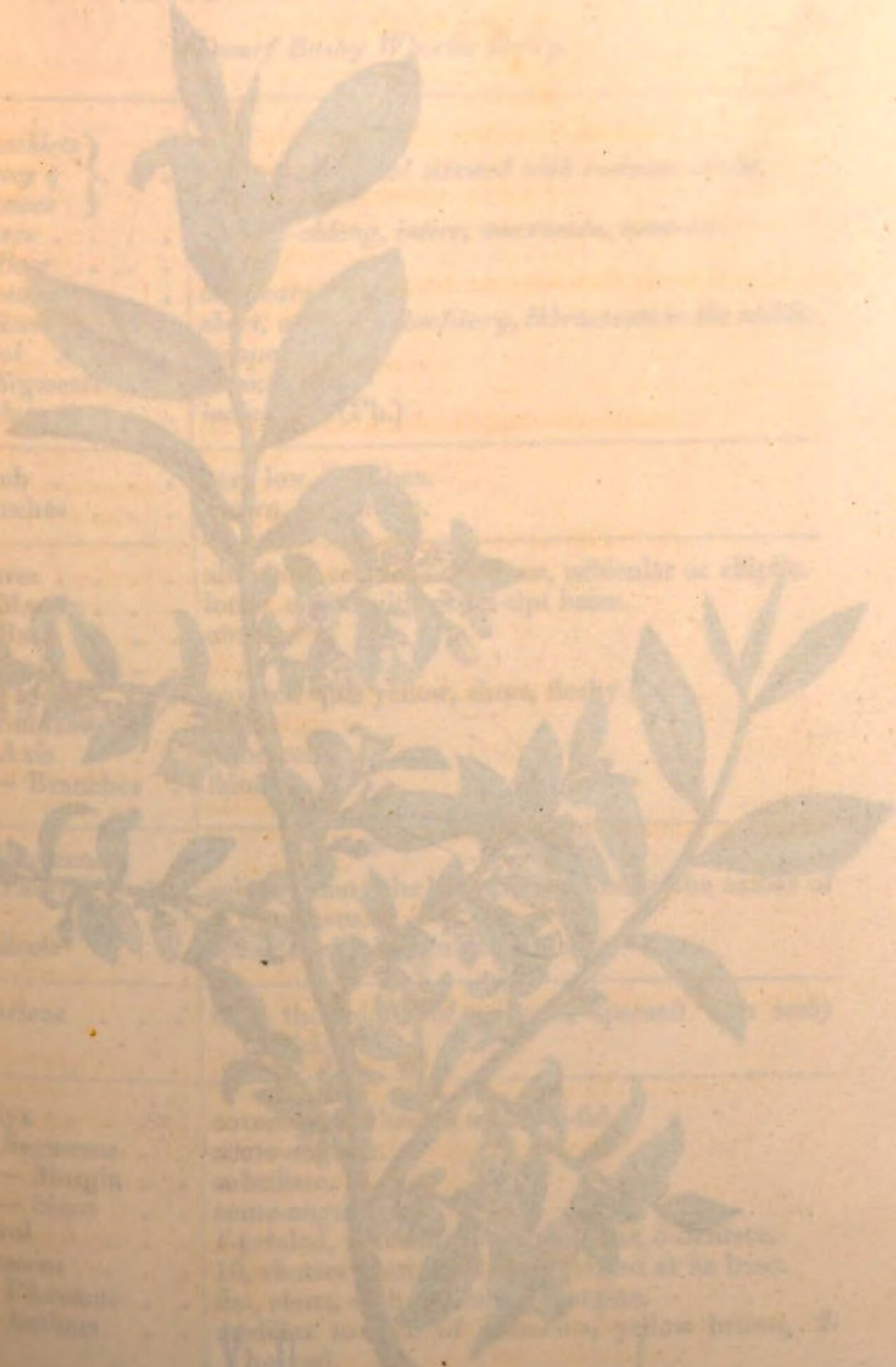
31.

OXYCOCCOS ERECTUS. (Ph.)

Upright Cranberry.

Plant	*erect.*
Leaves	*oval, acuminate, serrulate and ciliate.*
Pedicels . . .	*axillary.*
Corol	*long, at last revolute.* (Ph.)
Shrub	small, erect.
Stem & — Branches	rather zig-zag, green, covered with short, horizontal hairs.
Petiole	sub 0, pubescent.
Leaves	alternate, subsessile, cordate-lanceolate.
— Margin . .	serrate.
—— Serratures.	acute.
——— Sinus . .	obtuse.
——— Sides . .	(exterior) excurved, (interior) short.
——— Vertices .	tipt with very long bristles.
— Base . . .	cordate.
— Apex . . .	acuminate.
— Surface . . .	glab.
— Subface . .	„ , shining, reticulate-venose.
— Axis	subciliate.
Inflorescence.	
— Flowers . . .	axillary, solitary.
Pedicels . . .	very slender, rose-coloured, pendulous, = length of flower.
Calyx	green, glab. short, 5-dentate.
— Dents.	
—— Sinus . .	obtuse.
Corol	long, slender, red when closed, tapering to an obtuse apex.
— Dents . . .	closing the mouth.
Stamens . . .	8, inserted below the divisions of the calyx.
— Filaments . .	short, flat, pubescent.
— Anthers . .	orange-color, straight, 2-horned.
—— Horns . .	= length of anthers.
Pistil.	
— Ovary . . .	hid in the calyx.
— Style . . .	long, cylindric, = stamens.
— Stigma . . .	scarcely apparent.
Berry	(acrosarc) black, orbicular, subin=, crowned by the remaining short dents of calyx.
— Umbilic . .	glab. red.
— Seeds . . .	many, brown.
Floration . . .	4th June, 1821.
Place	Mr. James Lee's, Hammersmith.
Country . . .	High mountains of Virginia and Carolina.

Plant	erect.
Leaves	oval, acuminate, serrulate and ciliate.
Petioles	auriculate.
Corol	long, at last revolute. (Pb.)
Stamens	small, erect.
Stem & — Branches	rather zig-zag, green covered with short, bristle-like hairs.
Petiole	sub 0, pubescent.
Leaves	alternate, subsessile, ovate-lanceolate.
— Margin	serrate.
—— Serratures	acute.
—— Sinus	obtuse.
—— Sides	(exterior) excurved, (interior) sinuous.
—— Vertex	tipt with very long bristle.
— Base	cordate.
— Apex	acuminate.
— Surface	glab.
— Surface	.. . shiny, reticulate-veinose.
— Veins	subcostate.
Inflorescence.	
— Flowers	axillary, solitary.
Pedicels	very slender, rose-colored, pendulous = length of flower.
Calyx	green, glab. 5-dentate.
— Divis.	
—— Sinus	obtuse.
Corol	long, slender, red when closed, tapering to an obtuse apex.
— Limb	closing the mouth.
Stamens	is inserted below the division of the calyx.
— Filaments	short, flat, pubescent.
— Anthers	orange-color, straight, 2-locular.
—— Horns	= length of anthers.
Pistil.	
— Ovary	3celled, in the calyx.
— Style	long, cylindric = stamens.
—— Stigma	minutely capitate.
Berry	(maturing) black, orbicular, subin=, crowned by the remaining short dents of calyx.
— Pulp	glab. red.
— Seeds	many, brown.
Floration	4th June, 1821.
Place	Mr. James Lee's, Hammersmith.
Country	High mountains of Virginia and Carolina.



J. Hart Del.

Pub. by J. & A. Arch. Cornhill. April 1 1823.

Waldell Sc.

32.

VACCINIUM DUMOSUM. v. HUMILE.

Dwarf Bushy Whortle Berry.

Branchlets } *Leaves &* } *Racemes* . . .	*rather hispid and strewed with resinous atoms.*
Leaves	*obovate-oblong, intire, mucronate, concolor.*
— Base . . .	*acute.*
Racemes . . .	*bracteate.*
Pedicels . . .	*short, axillar, subsolitary, bibracteate in the middle.*
Corol	*campanulate.*
— Segments . .	*rotundate.*
Anthers	*included.* (Ph.)
Shrub	very low, 6 inches.
Branches . . .	brown, tomentose.
Leaves	alternate, sessile, coriaceous, orbicular or elliptic.
— Margin . . .	intire, ciliate with gland-tipt hairs.
— Base . . .	obtuse.
— Apex . . .	,,
— Faces . . .	covered with yellow, short, fleshy hairs.
— Subface . .	paler.
— Axis . . .	pubescent.
—— Branches .	fainter.
Inflorescence.	
— Flowers . .	solitary along the branchlets, close in the axillas of the leaves.
Pedicels . . .	sparsed with brown gland-scales.
Bracteas . . .	2 in the middle of pedicels, sparsed with scaly particles.
Calyx	covered with brown scales, 5-fid.
— Segments . .	acute-angular.
—— Margin . .	subciliate.
—— Sinus . .	acute-angular.
Corol	1-petaled, urceolate, sub 5-gonous, 5-dentate.
Stamens . . .	10, shorter than corol and inserted at its base.
— Filaments . .	flat, short, with pubescent margins.
— Anthers . .	medifixt to face of filaments, yellow brown, 2-horned.
—— Horns . .	= body, erect.
Disk	round, closing mouth of calyx.
Pistil	longer than stamens.
— Ovary . . .	hid under the disk.

— Style . . .	arising from centre of disk, glab. tapering.
— Stigma . . .	simple, merely the uneven top of style.
Floration . . .	22d May, 1822.
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	New Jersey to Florida.
Dissection . . .	f. 1. calyx and pistil. —2. corol. —3. anther, front view. —4. „ , side „

J. Hart. Del.

Pub. by J. & A. Arch, Cornhill. May. 1 1823.

W. Lizars. Sc.

33.

VACCINIUM VIRGATUM. (W.)

Twiggy Whortle-Berry.

Branches . . .	*floriferous, elongated, subaphyllous.*
Leaves	*lanceolate-oblong, acute, serrulate, glab.*
— Apices . . .	*acute.*
Racemes . . .	*sessile, corymbose, bracteate.*
Corol	*cylindric.*
— Mouth . . .	*narrowed.*
— Segments . .	*very short.*
Calyx	*reflected.*
Style	*included.* (Ph.)
Shrub	erect, 2-2½ F.
Stem & —Branches . .	cylindric, olive-color with yellow speckles.
Petiole	very short (sub 0) pubescent.
Leaves	alternate, elliptic.
— Margin . . .	gland-serrulate.
—— Serrulations	subincumbent
——— Sinus . .	acute.
——— Sides . .	(exterior) excurved.
——— Vertices .	tipt with pediceled glands.
— Base . . .	angular.
— Apex . . .	„ , mucronate.
— Surface . . .	glab. (the axis only pubescent).
— Subface . .	solitarily gland-hispid.
— Axis	prominent, pubescent.
—— Branches .	pubescent at origin, obsolete.
Racemes . . .	1-sided, numerous, alternating on the upper naked part of stem and branches.
Peduncles . . .	green, sericeous, directed horizontally.
— Pedicels . .	„ „ , fixed on one side of the axis, pendulous, = length of flower.
Bracteas . . .	3 at base of each pedicel, reddish, lanceolate.
— Margin . . .	intire, ciliate.
Calyx	subglab. campanulate, 5-fid.
— Segments . .	intire, acute-angular.
—— Sinus . . .	acute.
Corol	1-petaled, cylindric-conic, very shortly 5-dentate, strongly 5-costate.
— Dents . . .	acute.
Stamens . . .	10, inserted at base of corol.

— Filaments . .	flat, with ciliate sides.
— Anthers . .	longer than filaments, 2-horned, subbasifixt, glab. and adnate to their faces, 2-lobed.
—— Lobes . .	terminated by 2 continuous horns.
Pistil.	
— Ovary . . .	hid in the calyx.
— Style . . .	= corol, rather tapering, glab.
— Stigma . . .	small, simple, subcapitate.
Floration . . .	1st June, 1822.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Virginia & Carolina.
Dissection . .	f. 1. anther, front view.

J. Hart. Del. Pub. by J. & A. Arch Cornhill May. 1. 1823. Weddell. Sc.

34.

VACCINEUM VIRGATUM. V. ANGUSTIFOLIUM.

Narrow-leaved twiggy Whortle-Berry.

Shrub	diffuse, spreading, 2-3 F.
Stem	cylindric, glab. spangled with white atoms.
Branches . . .	rather naked upwards.
Leaves	alternate, sessile, long-lanceolate.
— Margin . . .	remotely subserrulate.
—— Serrulations	tipt with minute stiped glands.
— Base . . .	acute.
— Apex . . .	„
— Surface . .	glab. only the axis set with close white hairs.
— Subface . .	(parenchyma) glab. strewed with brown, minute, pediceled-glands.
— Nerves . . .	gland-haired.
— Axis	prominent.
—— Branches & —— Veins	obsolete.
Racemes . . .	alternating on the terminal axis, close, simple.
— Pedicels . .	(not very long) glab.
Bracteas . . .	2 on middle of each pedicel, lanceolate, acute, intire.
Calyx	glab. 5-fid.
— Segments . .	lanceolate, acute, intire.
—— Sinus . .	acute.
Corol	oblong-conic, coarctate, sub 5-gonous, shortly 5-dentate.
Stamens . . .	8-10, shorter than corol and inserted at its base.
— Filaments . .	flat, white-haired.
— Anthers . .	yellow-brown, = filaments, fixed to upper part of the face, muticate.
Disk	circular.
Pistil.	
— Ovary . . .	hid in the calyx.
— Style . . .	glab. tapering.
— Stigma . . .	subcruciform.
Berry	(acrosarc) black, orbicular, crowned with the 5 lanceolate, persisting segments of the calyx, juicy.
— Umbilic . .	warty, closed.
— Seeds . . .	(nutlets) several, brown.
Floration . . .	27th May, 1822.
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	North America.
Dissection . . .	f. 1. calyx and pistil. —2. corolla. —3. front view of the anthers. —4. side. „ „ —5. fruit.

34.

VACCINIUM VIRGATUM. v. ASHEVILLENSE.

Asheville Huckleberry.

Shrub . . .	diffuse, spreading, 2-3 F.
Stem . . .	cylindric, glab. speckled with white atoms.
Branches . . .	rather rigid upwards.
Leaves . . .	alternate, sessile, long-lanceolate.
— Margin . . .	remotely subserrulate.
— Serrulations	tipt with minute stiped glands.
— Base . . .	acute.
— Apex . . .	"
— Surface . . .	glab. only the axis set with close white hairs.
— Subface . . .	(paler) and glab. strewed with brown, minute, pedicelled glands.
— Nerves . . .	glandl-hairy.
— Axis . . .	prominent.
— Branches & Veins	obsolete.
Racemes . . .	alternating on the terminal axis, close, simple.
— Pedicels . . .	(not very long) glab.
Bracteas . . .	2 on middle of each pedicel, lanceolate, acute, intire.
Calyx . . .	glab. 5-fid.
— Segments . . .	lanceolate, acute, intire.
— Sinus . . .	acute.
Coral . . .	oblong-conic, coarctate, sub 5-gonous, shortly 5-dentate.
Stamens . . .	8-10, shorter than coral and inserted at its base.
— Filaments . . .	flat, white-hairy.
— Anthers . . .	yellow-brown, ≡ filaments, fixed to upper part of the face, mutiate.
Pistil . . .	circular.
Ovary . . .	hid in the calyx.
— Style . . .	glab. capering.
— Stigma . . .	subcapitellate.
Berry . . .	(ornamt) black, orbicular, crowned with the 5 lanceolate, persisting segments of the calyx, juicy.
— Fleshy . . .	warty, closed.
— Seeds . . .	(nucleis) several, brown.
Flowering . . .	27th May, 1839.
Place . . .	Messrs. Wyldey and Co's., Fulham.
Country . . .	North America.
Dissection . . .	f. 1. calyx and pistil. —2. corolla. —3. front view of the anthers. —4. side. " —5. Dust.

VACCINEUM TEUFELII. (W.)

Pseudobotrytis Teufelii Bubák & Jerg.

5.

1. 2. 3. 4.

J. Hart. Del. Pub. by J. & A. Arch. Cornhill. May 1. 1823. Wedgwood Sc.

35.

VACCINEUM TENELLUM. (W.)

Pennsylvanian Whortle-Berry.

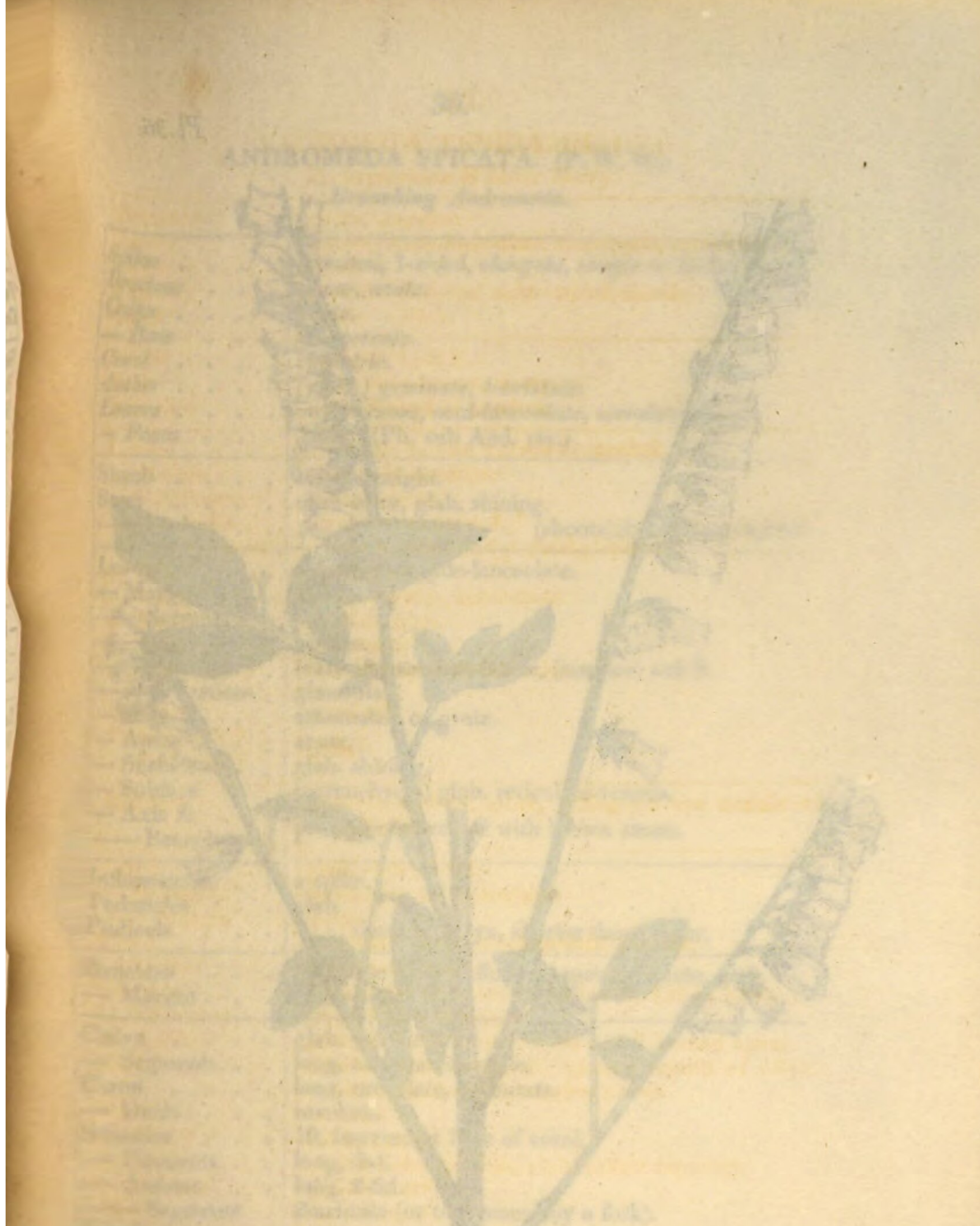
Branches . . .	*green, angular.*
Leaves	*sessile, ovate-lanceolate, mucronate, serrulate.*
— Faces . . .	*lucid.*
Fascicles . . .	*crowded-flowered, subterminal, sessile.*
Corol	*ovate.* (Ph.)
Shrub	upright, $1\frac{1}{2}$-2 F.
Bark	glab. olive-brown, warty.
Branches . . .	white-haired in patches.
Leaves	alternate, sessile, narrow-lanceolate.
— Margin . . .	obscurely-serrulate.
—— Serratures .	subimbricate.
——— Sides . .	(exterior) excurved.
——— Vertices .	rather hooked and pedicel-glanded.
— Base . . .	attenuated.
— Apex . . .	acute-angular, mucronate.
— Faces . . .	shining, glab.
— Axis	prominent „
—— Branches .	reticulating with the veins.
Racemes . . .	terminal.
Peduncles & — Pedicels	glab.
Bracteas . . .	ovate-lanceolate, intire, sitting on the middle of pedicels.
Calyx	glab. short, 5-fid.
— Segments . .	spreading, acute-angular.
—— Margin . .	intire.
Corol	1-petaled, short, suburceolate, dentate.
— Dents . . .	short, reflected,
Stamens . . .	10, shorter than corol and inserted at its base.
— Filaments . .	short, flat, pubescent.
— Anthers . .	medifixt, with cordate base and 2-horned apex.
Disk	circular, flat, scolloped, closing mouth of calyx, with radiating depressions above.
Pistil	= corol.
— Ovary . . .	hid in calyx.
— Style . . .	arising from the disk, glab. rather tapering.
— Stigmas . .	simple, small.
Berry	(an acrosarc).
Floration . . .	20th May, 1822.
Place	Mr. James Lee's, Hammersmith.
Country . . .	New England to Virginia. Mountains of Pennsylvania.
Dissection . . .	f. 1. calyx and pistil. —2. corolla. —3. front view of an anther. —4. side „ „ —5. berries.

35.

VACCINEUM TENELLUM. (*W.*)

Pentandria Monogynia. Whortle-Berry.

Branches . . .	green, angular.
Leaves . . .	sessile, ovate-lanceolate, mucronate, serrulate.
— Fibres . . .	lucid.
Panicles . . .	crowded-flowered, subdivided, scaly.
Coral	ovate. (*Pb.*)
Shrub	upright, 1½-2 F.
Bark	glab. olive-brown, warty.
Branches . . .	white-barred in patches.
Leaves	alternate, sessile narrow-lanceolate.
— Margin . . .	obscurely-serrulate.
— Serratures .	subimbricate.
— Side . . .	(exterior) exserted.
— Vertex . .	rather hooked and pedicel-glanded.
— Base . . .	attenuated.
— Apex . . .	acute-angular, mucronate.
— Faces . . .	shining, glab.
— Axis . . .	prominent.
— Branches .	reticulating with the veins.
Racemes . . .	terminal.
Peduncles & }	glab.
— Pedicels }	
Bracteas . . .	ovate-lanceolate, little, sitting on the middle of pedicels.
Calyx	glab. short, 5-fid.
— Segments .	spreading, acute-angular.
— Margin . .	little.
Coral	1-petaled, short, subturbinate, dentate.
— Dents . . .	short, reflected.
Stamens . . .	10, shorter than coral and inserted at its base.
— Filaments .	short, flat, pubescent.
— Anthers . .	bedlike, with cordate base and 2-horned apex.
Disk	circular, flat, scalloped, closing mouth of calyx.
	with radiating depressions above.
Pistil	= coral.
— Ovary . . .	hid in calyx.
— Style . . .	arising from the disk, glab. rather tapering.
— Stigma . .	simple, small.
Berry	(an acrosarch)
Floration . . .	30th May, 1822.
Place	Mr. James Lee's, Hammersmith.
Country . . .	New England to Virginia. Mountains of Pennsylvania.
Obsertion . . .	1. calyx and pistil.
	—2. corolla.
	—3. front view of an anther.
	—4. side " "
	—5. berries.



ANDROMEDA SPICATA. (P. W. W.)

Branching Andromeda.

Spikes	*terminal, 1-sided, elongate, simple or branched.*
Bracteas . . .	*linear, acute.*
Calyx	*acute.*
— Base . . .	*2-bracteate.*
Corol	*cylindric.*
Anther	*(apex) geminate, 4-aristate.*
Leaves	*membranous, oval-lanceolate, serrulate, acute.*
— Faces . . .	*glab.* (Ph. sub And. rac.)
Shrub	small, upright.
Stem	olive-color, glab. shining.
— Branches . .	„ (shoots) short, white-haired.
Leaves	alternate, elliptic-lanceolate.
— Margin . .	serrulate.
—— Serrulations	acute.
——— Sinus . .	obtuse.
——— Sides . .	(exterior) subcurvilinear, (interior) sub 0.
——— Vertices .	glandular.
— Base . . .	attenuated or ovate.
— Apex . . .	acute.
— Surface . . .	glab. shining.
— Subface . .	(parenchyma) glab. reticulate-venous.
— Axis & —— Branches	prominent, strewed with brown atoms.
Inflorescence . .	a spike.
Peduncles . . .	glab.
Pedicels . . .	„ , short, = calyx, shorter than flower.
Bracteas . . .	2 at base of each flower, tapering, acute, glab.
— Margin . . .	scariose.
Calyx	glab. 5-parted.
— Segments . .	long, attenuated, acute.
Corol	long, urceolate, 5-dentate.
— Dents . . .	revolute.
Stamens . . .	10, inserted at base of corol.
— Filaments . .	long, flat.
— Anthers . .	long, 2-fid.
—— Segments .	2-aristate (or terminated by a fork).
Pistil.	
— Ovary . . .	globular.
— Style . . .	rather shorter than corol, slender, linear.
— Stigma . . .	simple, 3-puckered, broader than style,
Floration . . .	9th June, 1821.
Place	Mr. Knight's, King's Road, Chelsea.
Country . . .	Canada to Florida.

ANDROMEDA SPICATA. (P. W. W.)

Drooping Andromeda.

Spike . . .	terminal, 1-sided, elongate, simple or branched.
Bracteas . . .	brown, acute.
Calyx . . .	acute.
— Base . . .	5-bracteolate.
Coral . . .	cylindric.
Anther . . .	(open) geminate, 4-cristate.
Leaves . . .	membranous, oval-lanceolate, serrulate, acute.
— Upper . . .	glab. (Pl. sub And. rac.)
Shrub . . .	small, upright.
Stem . . .	olive-color, glab. shining.
— Branches . .	(shoots) short, white-haired.
Leaves . . .	alternate, elliptic-lanceolate.
— Margin . . .	serrulate.
— Surfaces . .	acute.
— Sides . . .	obtuse.
— Veins . . .	(external) subcurvilinear, (interior) sub 0.
— Vertices . .	glandular.
— Base . . .	attenuated or ovate.
— Apex . . .	acute.
— Surface . .	glab. shining.
— Subface . .	(parenchyma) glab. reticulate-venous.
— Axis & — Branches	pyramidic, streaked with brown atoms.
Inflorescence . .	a spike.
Peduncles . . .	glab.
Pedicels . . .	" , short, = calyx, shorter than flower.
Bracteas . . .	Base of each flower, tapering, acute, glab.
— Margin . . .	ciliate.
Calyx . . .	glab. 5-parted.
— Segments . .	long, attenuated, acute.
Coral . . .	long, urceolate, 5-dentate.
— Deals . . .	revolute.
Stamens . . .	10, inserted at base of coral.
— Filaments . .	long, flat.
— Anthers . .	long, 2-tid.
— Segments . .	2-ariste (or terminated by a fork).
Pistil.	
— Ovary . . .	globular.
— Style . . .	rather shorter than coral, slender, linear.
— Stigma . . .	simple, 3-puckered, broader than style.
Flowering . . .	9th June, 1821.
Place	Mr. Knight's, King's Road, Chelsea.
Country . . .	Canada to Florida.

LYONIA PANICULATA. (W.) Sw. 1788.

Pentadel. Decandria.

ANDROMEDA SPICATA. (F. W. W.)

Drooping Andromeda.

Spike . . .	terminal, 1-sided, elongate, simple or branched.
Bracteas . . .	minute, acute.
Calyx . . .	acute.
— Base . . .	5-lobulate.
Corol . . .	cylindric.
Anther . . .	(open) geminate, 4-cristate.
Leaves . . .	membranous, oval-lanceolate, serrulate, acute.
— Face . . .	glab. (Pl. sub And. rac.)
Shrub . . .	small, upright.
Stem . . .	olive-color, glab. shining.
— Branches . . .	(shoots) short, white-haired.
Leaves . . .	alternate, elliptic-lanceolate.
— Margin . . .	serrulate.
— Serrulations . . .	acute.
— Base . . .	obtuse.
— Sides . . .	(external) subconvex, (interior) sub 0.
— Vertex . . .	glandular.
— Base . . .	attenuated or ovate.
— Apex . . .	acute.
— Surface . . .	glab. shining.
— Subface . . .	(parenchyma) glab. reticulate-venous.
— Axis & — Branches	pseudopter. strewed with brown atoms.
Inflorescence . . .	a spike.
Peduncles . . .	glab.
Pedicels . . .	" , short, = calyx, shorter than flower.
Bracteas . . .	Sat base of each flower, tapering, acute, glab.
— Margin . . .	scarious.
Calyx . . .	glab. 5-parted.
— Segments . . .	long, attenuated, acute.
Corol . . .	long, urceolate, 5-dentate.
— Deals . . .	revolute.
Stamens . . .	10, inserted at base of corol.
— Filaments . . .	long, flat.
— Anthers . . .	long, 2-fid.
— Segments . . .	2-ariate (or trifoliated by a fork).
Pistil.	
— Ovary . . .	globular.
— Style . . .	rather shorter than corol, slender, linear.
— Stigma . . .	simple, 3-puckered, broader than style.
Duration . . .	9th June, 1821.
Place . . .	Mr. Knight's, King's Road, Chelsea.
Country . . .	Canada to Florida.

LYONIA PANICULATA. (W.) DC.

Panicled Andromeda.

2. 1.

E.D.Smith.Del. Pubby.J.&A.Arch.Cornhill.May.1.1823. W.e.Hall.Sc.

LYONIA PANICULATA. (W. sub. and.)

Panicled Andromeda.

Plant	*pubescent.*
Branches . . .	*floriferous, terminal, paniculate, rather naked.*
Glomerules . .	*pedunculate.*
Corol	*subglobose, pubescent!*
Anthers	*obtuse, naked.*
Leaves	*obovate-lanceolate, acute, subintire.* (Ph. sub. And.)
Shrub	small, upright.
Branches . . .	glab. brown.
Bark	irregularly and longitudinally divided.
Petiole	hunched, very short, glab.
Leaves	alternate, elliptic, lanceolate.
— Margin . . .	scabrous, scarcely denticulate.
— Base . . .	ovate or acute-angular.
— Apex . . .	acute-angular.
—— Tip . . .	callous.
— Surface . — Subface	covered with short, gland-like hairs.
— Axis & —— Branches	prominent, strewed with brown atoms.
Inflorescence . .	a simple raceme, about 12-flowered.
Peduncles . . .	green, sericeous.
Calyx	covered with short, soft, gland-like hairs, 5-dentate.
— Dents . . .	short, acuminate.
—— Sides . . .	bowform.
—— Sinus . .	acute-angular.
Corol	a compressed globe, sericeous.
— Mouth . . .	nearly closed.
— Dents . . .	5, short, reflected, acute-angular.
Stamens . . .	10, approaching the pistil, shorter than the corol and inserted round the ovary.
— Filaments . .	crooked, hairy.
— Anthers . .	oblong, basifixt.
—— Lobes . .	connate, divided at top, naked!
Pistil	longer than stamens.
— Ovary . . .	globular, furrowed, sericeous above.
— Style . . .	= length of ovary, subconic, truncate.
Floration . . .	13th July, 1821.
Place	Mr. Knight's, King's Road, Chelsea.
Country . . .	Canada to Carolina.
Dissection . . .	f. 1. anther. —2. „ , shewing its 2 cells.

37.

LYONIA PANICULATA. (W. pic. Ann.)

Paniced rhodromels.

Plant . . .	perennial.
Branches . .	fiorifirous, terete, panicled, rather naked.
Glandules . .	pedunculate.
Corol . . .	subglobose, puberulent.
Anthers . . .	obtuse, naked.
Leaves . . .	oblong-lanceolate, acute, subsessile. (Pl. sub. Aud.)
Shrub . . .	small, upright.
Branches . .	glab. brown.
Bark . . .	irregularly and longitudinally divided.
Petiole . . .	bracted, very short, glab.
Leaves . . .	almost, elliptic, lanceolate.
— Margin . .	serious, scarcely denticulate.
— Base . .	ovate or acute-angular.
— Apex . .	acute-angular.
— Tip . .	callous.
— Surface .	covered with short, gland-like hairs.
— Subface .	
— Axis &	prominent, strewed with brown atoms.
— Branches	
Inflorescence .	a simple raceme, about 12-flowered.
Peduncles .	green, pubescent.
Calyx . . .	covered with short, soft, gland like hairs, 5-dentate.
— Dents . .	blunt, acuminate.
— Sides . .	hairy.
— Sinus . .	acute-angular.
Corol . . .	a compressed globe, pubescent.
— Mouth . .	nearly closed.
— Dents . .	5, short, reflected, acute-angular.
Stamens . .	10, approaching the pistil, shorter than the corol
	and inserted round the ovary.
— Filaments .	crooked, hairy.
— Anthers .	oblong, basifix.
— Pollen . .	conate, divided at top, naked.
Pistil . . .	longer than stamens.
— Ovary . .	globular, furrowed, pubescent above.
— Style . .	= length of ovary, subconic, truncate.
Floration . .	13th July, 1821.
Place . . .	Mr. Knight's, King's road, Chelsea.
Country . .	Canada to Carolina.
Direction . .	1. 1. sinister.
	—2. „ . blowing to 2 cells.

4. 3. 2. 1.

J. Hart, Del.

Bubby, J. & A. Arch. Cornhill. May 1. 1823.

38.

LYONIA SALICIFOLIA.

Willow-leaved Andromeda.

Raceme . . .	*compound.*
Anthers	*muticate (naked).*
Leaves	*lanceolate.*
— Margin . . .	*subserulate.*
— Faces & — Axis . .	*subgland-haired, shining.* (P.W.W.)
Shrub	upright, 3-4 F.
Branches . . .	rigid, glab. purple-brown.
Petiole	very short, strewed with brown atoms.
Leaves	alternate, long-lanceolate.
— Margin . . .	scarcely serrulate, (only a few inequalities).
— Base . . .	narrowed, ovate.
— Apex . . .	acuminate.
— Surface & — Subface	shining, strewed with a few short, gland-like hairs.
— Axis	prominent, gland-haired.
—— Branches .	vanishing and reticulating with the veins.
Racemes . . .	compound, 1 inch, alternately sessile on the terminal branches.
Peduncles . . .	pubescent.
Pedicels . . .	subglab. short, sub = corol.
Calyx	very short, 5-dentate.
— Dents . . .	in =, acute.
Corol	1-petaled, globular, subsericeous, contracted at the mouth, 5-6-dentate.
— Dents . . .	very short, acute, reflected.
Stamens . . .	10, a little shorter than corol, inserted round the ovary.
— Filaments . .	sericeous, flat, crooked, applied to the ovary.
— Anthers . .	ovate, medifixt, united, obliquely truncate at top, showing the 2 cells.
—— Aristas . .	none but a forked white rudiment on the back of anthers.
Pistil	shorter than the corol.
— Ovary . . .	subsericeous, globular, puckered.
— Style . . .	short, thick, cylindric, rather narrower at base.
Floration . . .	22d June, 1822.
Place	Arboretum, Kew.

Country . . .	North America.
Observation.	A beautiful species and closely allied to *paniculata*, but its lanceolate, shining, less pubescent leaves and other particulars sufficiently distinguish it.
Dissection . . .	f. 1. calyx and pistil. —2. corol. —3. anther and filament. —4. „ shewing its cells.

M.rs Travis. Del.

Pub. by J. & A. Arch. Cornhill. May. 1.1813.

Wed. Lith. Sc.

39.

CLETHRA TOMENTOSA. (Lam. Enc.)

Woolly-leaved Clethra.

Raceme	*spicate, simple, bracteate, villous-tomentose.*
Leaves	*cuneate-obovate, acute, finely serrate above.*
— *Subface* . .	*white-tomentose.* (Ph.)
Shrub	upright, small.
Branches . . .	dark brown, glab.
Petiole	shortish.
Leaves	4-inch. alternate, obovate-lanceolate, broad.
— Margin . . .	subequally and sharply dentate.
—— Dents . .	obtuse-angular.
——— Sinus . .	acute-angular.
——— Sides . .	(exterior) bowform, (interior) excurved.
——— Vertices .	long-pointed.
— Base . . .	tapered.
— Apex . . .	acute.
— Surface . . .	rough to touch, strewed with small, white stars!
— Subface . .	paler, densely pubescent.
Inflorescence.	
— Spike . . .	long, terminal.
Peduncle . . .	sericeous.
— Pedicel . . .	„ shorter than flower.
Bractea . . .	at base of each pedicel, long, narrow, lanceolate, sericeous.
— Margin . . .	(particularly towards the apex) set with in=bristles.
— Apex . . .	long, acute.
Calyx	sericeous, 5-fid.
— Segments . .	lanceolate.
—— Margin . .	intire, ciliate.
—— Sinus . .	acute.
Corol	longer than calyx, 5-petaled.
— Petals . . .	elliptic, intire.
Stamens . . .	10, = corol, inserted at claws of petals.
— Filaments . .	compressed, tapering.
— Anthers . .	sagittate, medifixt.
—— Lobes . .	grooved.
Pistil.	
— Ovary . . .	orbicular, sericeous.
— Style . . .	cylindric, thick.
— Stigmas . .	3, cylindric, obtuse.
Floration . . .	17th Sept. 1821.
Place	Arboretum, Kew.
Country . . .	Swamps of Virginia and Carolina.

CLETHRA TOMENTOSA. (Lam. Enc.)

Woolly-leaved Clethra.

Flowers . . .	spicate, simple, bracteate, villous-tomentose.
Leaves . . .	cuneate-obovate, acute, finely serrate above.
— Surface . .	subtle-tomentose. (Pl.)
Shrub . . .	upright, small.
Branches . .	dark brown, glab.
Petiole . . .	short.
Leaves . . .	4-inch, alternate, obovate-lanceolate, broad.
— Margin . .	subequally and sharply dentate.
— Base . .	obtuse-angular.
— Sinus . .	acute-angular.
— Side . .	tapering low down, thence excurved.
— Veins . .	long-pointed.
— Base . .	equaled.
— Apex . .	acute.
— Surface . .	rough to touch, strewed with small white stars!
— Substance .	paler, thready pubescent.
Inflorescence.	
— Spike . .	3-in. terminal.
Peduncle . .	pubescent.
— Rachis . .	shorter than leaves.
Bracts . . .	10 = coral, inserted at claws of petals.
— Pubescence .	compressed, tripartite.
— Subulate . .	sagittate, acuminate.
— Lobes . .	grooved.
Petal.	
— Claw . . .	oblanceolate, petiolate.
— Style . . .	cylindric, thick.
— Stigma . . .	3, cylindric, obtuse.
Flowering . .	17th Sept. 1821.
Place . . .	Arboretum, Kew.
Country . . .	Swamps of Virginia and Carolina.

J. Hart Del.

Pub. by J. & A. Arch. Cornhill. May 1 1823.

Wedd del. Sc.

40.

STYRAX GLABRUM. (Cavanilles Dis.)

Smooth Storax.

Leaves	*oval-lanceolate.*
— *Apices* . . .	*acute.*
— *Faces* . . .	*glab.*
Peduncles . . .	*axillary, 1-flowered, solitary or binate.*
Stamens . . .	6-10. (Ph.)
Shrub	erect, 5 F.
Branches . . .	glab.
— Shoots . . .	green, covered with black warts.
Petiole	very short, spangled with solitary yellow atoms.
Leaves	alternate, elliptic-lanced and obovate.
— Margin . . .	subdenticulate.
—— Denticles.	
——— Sinus . .	rather incurved.
——— Vertices .	subindurated.
— Base	attenuated.
— Apex	broad-acuminate.
— Faces . . .	glab.
— Axis	„ prominent.
—— Branches .	obliterated.
Inflorescence . .	solitary, axillary.
Pedicels . . .	= flower, thickening upwards into the calyx.
Calyx	glab. laciniate-denticulate.
— Segments . .	in =, scarious, pubescent.
Corol	sericeous, 1-petaled, shortly tubular.
— Segments . .	linear-oblong, emarginate.
—— Sides . . .	intire.
Stamens . . .	sub=corol, 1-delphous, inserted at the base of tube of corol.
— Filaments . .	sericeous at base and tube of union.
— Anthers . .	oblong, acute, adnate to inside of upper part of filaments.
—— Lobes . .	membranous, separated at base and united at apex.
Pistil	rather longer than stamens.
— Ovary . . .	sericeous, adhering.
— Style . . .	somewhat longer than stamens and corol, glab.
— Stigma . . .	simple, very small.
Floration . . .	17th July, 1821.
Place	Arboretum, Kew.
Country . . .	Swamps of Virginia and Carolina.
Observation.	Mr. Pursh has very properly placed Styrax in Monodelphia Polyandria.

40.

STYRAX GLABRUM. (Caravalles Dis.)

Smooth Styrax.

40.

STYRAX GLABRUM. (Chapman Obs.)

Smooth Styrax.

Leaves . . .	oval-lanceolate.
— Petioles . . .	glab.
Panicles . . .	axillary, 1-flowered, solitary or fascic.
Stamens . . .	6-10. (Pk.)
Shrub . . .	erect, 5 F.
Branches . . .	glab.
— Shoots . . .	green, covered with black warts.
Petiole . . .	very short, sparingly *with solitary yellow atoms.*
Leaves . . .	alternate, elliptic-lanced and obovate.
— Margin . . .	subdenticulate.
— Dentical.	
— Sinus . . .	rather incurved.
— Vertex . . .	subobtuse.
— Base . . .	attenuated.
— Upper . . .	broad-acuminate.
— Lower . . .	glab.
— Nerves . . .	7, prominent.
— Reticulation .	obliterated.
Inflorescence . .	solitary, axillary.
Pedicels . . .	= flower, thickening upward, not the calyx.
Calyx . . .	glab. bicinct-denticulate.
— Segments . . .	ib =, ovatous, pubescent.
Corol . . .	subsessile, 1-petaled, shortly tubular.
— Segments . . .	linear-oblong, emarginate.
— Sides . . .	intus.
— Filaments . .	connected at base and tube of union.
— Anthers . . .	oblong, acute, adnate to inside of upper part of filaments.
— Lobes . . .	membranous, separated at base and united at apex.
Pistil . . .	rather longer than stamens.
— Ovary . . .	sericeous, adhering.
— style . . .	somewhat longer than stamens and corol, glab.
— Stigma . . .	simple, very small.
Flowering . . .	17th July, 1831.
Place . . .	Arboretum, Kew.
Country . . .	Swamps of Virginia and Carolina.
Observation.	Mr. Pursh has very properly placed Styrax in Monadelphia Polyandria.

Pl.41.

J.Hart Del.

Pub.by J.& A.Arch. Cornhill. June.1.1823.

Wild & Ald.

41.

STYRAX PULVERULENTUM. (Mich. Fl.)

Powdery Storax.

Leaves	*subsessile, oval or obovate, obtuse.*
— *Subface* . .	*pulverulent-tomentose.*
Flowers	*axillary & sub-3-nate, very shortly pediceled.* (Ph.)
Shrub	erect, 4-5 F.
Branches . . .	glab. brown.
Petiole	short, pubescent above.
Leaves	alternate, obovate.
— Margin . . .	obsoletely dentate, subciliate.
—— Dents . .	small.
—— Vertices . .	mucronate.
— Base . . .	obtuse-angular.
— Apex . . .	„ .
— Surface . .	glab.
— Subface . .	(when much magnified) subvillous, strewed with white, 3-5 rayed stars !
— Nerves . . .	laterally villous.
— Axis	prominent.
—— Branches .	alternate, with reticulate terminations.
Flowers	axillary, solitary, cernuous.
Pedicels . . .	$\frac{1}{2}$ inch, sericeous.
Calyx	sericeous, inequally incised-dentate.
— Segments . .	glandular at apices.
Corol	1-petaled, 6-fid.
— Tube . . .	short.
— Segments . .	long, lanceolate, intire.
Stamens . . .	12, = corol, villous, united half way in a tube and inserted at base of corol.
— Filaments . .	short.
— Anthers . .	= filaments, narrow.
—— Lobes . .	adnate their whole length to filament, oblong-linear.
Pistil.	
— Ovary . . .	globular, sericeous, free.
— Style . . .	glab.
— Stigma . . .	simple, small.
Floration . . .	21st June, 1821.
Place	T. Canham's, Esq., Twickenham.
Country . . .	Woods of Virginia and Carolina.

No. 41.

STYRAX PULVERULENTUM. (Mich. fl.)

Powdery Storax.

E.D.Smith. Del. Pub.by J.& A.Arch. Cornhill. June. 2.1823. W.d.Lill Sc.

HYDRANGEA CORDATA. (Mich. Fl.)

Heart-leaved Hydrangea.

Cyme	*subradiate.*
Leaves	*broad-ovate, acuminate, largely dentate.*
— *Base* . . .	*subcordate.*
— *Surface* . .	*glab.* (Ph.)
Shrub	low, upright.
Stem	cylindric, glab.
Petiole	1 inch, = ½ length of leaf, glab. grooved above.
Leaves	opposite, petiolate, subcordate-ovate.
— Margin . .	inequally dentate.
—— Dents . .	obtuse-angled.
——— Sinus . .	acute.
——— Sides . .	excurved.
——— Vertices .	incrassated.
— Base . . .	slightly cordate.
— Apex . . .	acuminate.
— Surface . . .	glab.
— Subface . .	„ , paler.
— Axis & —— Branches	prominent, with solitary white hairs.
Corymb . . .	compound.
Peduncles & — Pedicels	yellow-green, sericeous.
Bracteas . . .	long, narrow, acute at both ends.
Calyx	glab. 10-ribbed, 5-dentate.
— Dents . . .	small, acute.
Corol	5-petaled.
— Petals . . .	concave, broad at base, acute, longer than calyx.
Stamens . . .	10, longer than petals, inserted at base of ovary.
— Filaments . .	subulate.
— Anthers . .	broader than long, basifixt.
—— Lobes . .	laterally grooved.
Pistil.	
— Ovary . . .	filling the calyx.
— Styles . . .	2, very thick, conic.
— Stigma . . .	0 apparent.
Floration . . .	10th Sept. 1821.
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	Mountains of Carolina.

42.

HYDRANGEA CORDATA. (Mich. Fl.)

Heart-leaved Hydrangea.

E.D.Smith. Del.

Pub.by J.&A. Arch. Cornhill. June 1. 1820.

Wood & Sc.

43.

HYDRANGEA NIVEA. (Mich. Fl.)

White-leaved Hydrangea.

Cyme	*radiate.*
Leaves	*ovate, acuminate, dentate.*
— *Dents* . . .	*mucronate.*
— *Subface* . .	*snowy-tomentose.* (Ph.)
Shrub	low.
Branches . . .	obsoletely sulcate, sparsed with short, white hairs.
Petiole	$=\frac{1}{2}$ length of leaf, sulcate and pubescent above.
Leaves	opposite, elliptic.
— Margin . . .	serrate.
—— Serratures .	obtuse-angular.
——— Sinus . .	" .
——— Sides . .	(both) excurved.
——— Vertices .	thickish, fleshy.
— Base . . .	slightly cordate, roundish.
— Apex . . .	acuminate.
— Surface . . .	(nerves) with solitary, white hairs.
— Subface . . .	covered with a dense, snow-white cotton.
— Axis & —— Branches	prominent, cottony.
Corymb . . .	compound with abortive floscules in the ray.
Peduncles & — Pedicels .	pubescent.
Bracteas . . .	0, (unless the small leaves on the corymb.)
Floscule . . .	(abortive) of the ray.
— Perigone . .	4-sepaled.
—— Sepal. . .	orbicular, intire.
——— Claw . .	short.
—— Beads . .	4, united in the centre.
Calyx	campanulate, few-haired, 5-dentate.
— Dents . . .	acute.
—— Sinus . .	obtuse.
Corol	5-petaled.
— Petals . . .	concave, orbicular, intire.
Stamens . . .	10, short, inserted on a membrane at mouth of calyx.
— Filaments . .	filiform.
— Anthers . .	basifixt, orbicular.
—— Lobes . .	1-sulcate.
Pistil.	
— Ovary . . .	subrotund, adhering.
— Style . . .	thick, short.
— Stigma . . .	2-lobed.
Floration . . .	6th Aug. 1821.
Place	Arboretum, Kew.
Country . . .	On the Head-Waters of the Savannah River, in Tennessee, &c.

43.

HYDRANGEA NIVEA. (Mich. Fl.

White-leaved Hydrangea.

J.Hart.Del. Pub.by J.&A.Arch. Cornhill June 21 1823. Wall sc.

ARISTOTELIA MACQUI. (Herit.)

Shining-leaved Aristotelia.

Flowers	*racemose.*
Leaves	*ovate, serrate.* (P.)
Shrub	upright.
Stem & — Branches	purplish, covered with very short hairs.
Petiole	= ⅓ length of leaf, red, pubescent.
Leaves	alternate, coriaceous, ovate-oblong.
— Margin . .	serrate.
—— Serratures .	obtuse-angular.
——— Sinus . .	acute.
——— Sides . .	(exterior) rectilinear, (interior) sub 0.
——— Vertices .	black-tipt.
— Surface . . .	shining (a few hairs on the nerves).
— Subface . .	glab. reticulate-veined.
— Axis	prominent, subpubescent.
—— Branches .	fainter.
Inflorescence . .	racemose.
Pedicels . . .	pubescent, with short, white, horizontal hairs.
Calyx	5-parted.
— Segments . .	acute-angular, = corol, red, covered with horizontal white hairs.
Corol	5-petaled.
— Petals . . .	cuneate, truncate, intire.
Stamens . . .	15, 3 opposite each segment of calyx, inserted round the ovary.
— Filaments . .	0.
— Anthers . .	emarginate, small.
Pistil.	
— Ovary . . .	glab. free.
— Style . . .	short.
— Stigmas . .	2, long, thin, twisted.
Floration . . .	9th June, 1821.
Place	Mr. Knight's, King's Road, Chelsea.
Country . . .	Chili.

44.

ARISTOTELIA MACQUERI (Herit.)

Shining-leaved Aristotelia.

Flowers . . .	racemose.
Leaves . . .	ovate, serrate. (P.)
Stem . . .	upright.
— Branches . . .	purplish, coloured with grey-ish short hairs.
Petiole . . .	½-¾ length of leaf, red, pubescent.
Leaves . . .	alternate, Cordate-ovate, ovate-oblong.
— Margin . . .	serrate.
— Stipules . . .	oblong-subulate.
— Sides . . .	(exterior) reclining, (interior) sub 0.
— Veins . . .	black-ribbed.
— Surface . . .	shining (a few hairs on the nerves).
— Colour . . .	dull, reticulate-veined.
— Axils . . .	prominent, subpubescent.
— Branches . . .	hairy.
Inflorescence . . .	racemose.
Pedicels . . .	pubescent, with short, white, horizontal hairs.
Calyx . . .	5-parted.
— Segments . . .	cells-angular, = coral, red, covered with horizontal white hairs.
Coral . . .	5-petaled.
— Petals . . .	cuneate, truncate, hairy.
Stamens . . .	15, 3 opposite each segment of calyx, inserted round the ovary.
— Filaments . . .	0.
— Anthers . . .	oblong, small.
Pistil.	
— Ovary . . .	glab. free.
— Style . . .	short.
— Stigma . . .	3 long, thin, twisted.
Flowering . . .	9th June-15th.
Place . . .	Mr. Rugby's, King's Road, Chelsea.
Country . . .	Chili.

J.Hart.Del.

Pub.by.J.&A.Arch.Cornhill.June.2.1823.

Weddell.Sc.

45.

EUPHORBIA SPINOSA. (L.)

Spinous Spurge.

Umbel	*simple, sub 5-fid.*
Involucre . . .	*ovate.*
,, . . .	*(general), 3-phyllous.*
— *Foliole* . . .	*oblong, very intire, glab.* (P.)
Subshrub . . .	small, 1-1½ F. delicate.
Branches . . .	pale-purplish-green, glab.
Leaves	opposite, sessile, oblong-linear.
— Margin . . .	intire.
— Base . . .	attenuated.
— Apex . . .	obtuse, mucronate.
— Faces . . .	glab. strewed with glaucous atoms.
— Axis	obsolete.
—— Branches .	0.
Inflorescence.	
— Umbel . . .	simple, terminal, 4-rayed.
—— Rays . . .	long, slender, glab.
Involucre . . .	(general) 4-phyllous, glab.
,, . .	(partial) 2 ,, , obovate, intire, closely strewed with glaucous atoms.
Calyx	fungous, 5-fid, ventricose.
— Segments . .	transversely oblong, glab. concave below, convex above, bending over the anthers.
—— Sinus . . .	obtuse.
Corol	5-petaled (scaled).
— Petals . . .	1 in each sinus of the calyx, very short, transversely oblong.
—— Limb . .	curved over the anthers.
—— Claw . . .	decurrent on interior of calyx.
Stamens . . .	16, in =, yellow.
— Filaments . .	tapering, slender, inserted round the ovary.
— Anthers . .	2-lobed, yellow.
—— Lobes . .	round, flat, furrowed.
Pistil.	
— Ovary . . .	subrotund, pedicelate, thickly set with style-like bodies.
— Style . . .	3-fid.
— Stigmas . .	2, oblong, obtuse.
Floration . . .	21st June, 1821.
Place	T. Canham's, Esq. Twickenham.
Country . . .	Italy. Crete. Mountains of Provence.
Observation.	This plant is not spinous as the name indicates, but it may be so in its native soil and situation.

EUPHORBIA SERPENS, H.B.K.

Spurge family.

Habit	annual, 1–1½ ft., delicate.
Branches	pale-purplish-green, glab.
Leaves	opposite, sessile, oblong-linear.
— Margin	entire.
— Base	attenuated.
— Apex	obtuse, mucronate.
— Faces	glab. strewed with glaucous atoms.
— Axils	obsolete.
— Branches	0.
Inflorescence.	
— Umbel	simple, terminal, 4-rayed.
— Rays	long, slender, glab.
Involucre	(general) 4-phyllous, glab.
"	(partial) " , obovate, intire, closely strewed with glaucous atoms.
Calyx	turgous, 5-fid, ventricose.
— Segments	transversely oblong, glab. concave below, convex above, bending over the antheræ.
— Sinus	obtuse.
Corol	5-petaled (scales).
— Petals	1 in each sinus of the calyx, very short, transversely oblong.
— Disk	general one, thalamiform.
— Glands	deepest orchestor of calyx.
Stamens	16, in ⎓, yellow.
— Filaments	inserting, slender, inserted round the ovary.
— Anthers	2-lobed, yellow.
— Lobes	round, flat, introrse.
Pistil	
— Ovary	subconical, pedicellate, closely set with style-like bristles.
— Style	3-fid.
— Stigmas	3, obtuse, obtuse.
Flowering	May–June 1821.
Country	Mex. Cuernavaca, Drummond! Preveden.
Observation	This plant is not spinous-as the name indicates, but may be so in its native soil and situation.

1.

J.Hart,Del.

Pub.by J.&A.Arch. Cornhill. June 2.1823.

Wood & Sl.Sc.

PHILADELPHUS GRANDIFLORUS. (W. E.)

Large-flowered Syringa.

Leaves	*ovate, acuminate, dentate.*
Subface (∠*s*) . .	*fasciculate-pilose.* (W. E.)
Shrub	6-8 F.
Stem	pale-brown, glab.
Branches . . .	opposite.
Petiole	short, pubescent.
Leaves	opposite, elliptic.
— Margin . . .	obscurely scolloped-dentate.
—— Dents . .	with callous tips.
— Base . . .	ovate.
— Apex . . .	acuminate.
— Surface . . .	glab.
— Subface . . .	pubescent.
— Axis & —— Branches	prominent, pubescent.
Inflorescence . .	1-flowered, axillary.
Pedicels . . .	pubescent, = calyx.
Calyx	pubescent, 4-fid.
— Segments . .	acute.
—— Sinus . .	obtuse-angular.
—— Vertices .	callous.
Corol	4-petaled.
— Petals . . .	glab. elliptic, intire, subemarginate.
Stamens . . .	numerous, shorter than corol, peridiscal.
— Filaments . .	setaceous.
— Anthers . .	basifixt, truncate at bottom and obtuse at top.
Disk	fleshy orbicular, closing mouth of calyx.
Pistil	arising from the disk.
— Style . . .	glab. columnar.
— Stigmas . .	4, = ½ length of style with dilated apices!!
Floration . . .	9th July, 1821.
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	North America.
Dissection . . .	f. 1. calyx, disk, style, and stigma.

PHILADELPHUS GRANDIFLORUS. (*W. E.*)

Large-flowered Syringa.

Order.	Saxifragaceæ, Hydran-geæ.
Generic name.	*Philadelphus*. (*W. E.*)
Flowers . . .	6-8 F.
Stem . . .	pale-brown-ish.
Branches . . .	opposite.
Petals . . .	short, yellow-ish.
Leaves . . .	opposite, elliptic.
— Margin . . .	obscurely scallop-dentate.
— Base . . .	with callous tips.
— Apex . . .	ovate.
— Surface . . .	acuminate.
— Sublus. . . .	glab.
— Axils . . .	pubescent.
— Thereby . . .	pseudonat, pubescent.
Inflorescence . . .	4-flowered, axillary.
Pedicels . . .	pubescent, = calyx.
Calyx	pubescent, 4-fid.
— Segments . . .	acute.
— Sinus . . .	obtuse-angular.
— Veins . . .	callous.
Corol	4-petaled.
— Petals . . .	glab. oblate, indtd, subconcentric.
— Stamens . . .	numerous, shorter than corol, perfidyal.
— Anthers . . .	sagittate.
Pistil	basitxl; truncate at bottom and oblique at top.
— Style . . .	Style orbicular, closing mouth of calyx.
— Stigma . . .	arising from *b*: disk.
Fruit	glab. columnar.
— Pedicels . . .	3 = ½ length of style with dilated apices!!
Flowering . . .	9th July, 1891.
Place	Magna Whitby Rural Cot's, Pullam.
Country . . .	North America.
Diagnosis . . .	6-8 l. calyx, disk, style, and stigma.

2.

1.

3.

J. Hart Del.

Pub. by J. & A. Arch, Cornhill, June 2 1823.

47.

PHILADELPHUS HIRSUTUS.

Hirsute Syringa.

Leaves	*oblong-ovate, acute, sharply and angularly denticulate.*
— *Surface* . . .	*hirsute.*
— *Subface* . .	*whitish, hirsute-villous.*
Branchlets . . .	*about 3-flowered.*
Peduncle . . .	*bracteate near the summit.* (Nuttall.)
Shrub	slender, upright, virgate.
Branches . . .	long, straight, virgate, glab. purple-brown.
— Branchlets .	opposite.
Petiole	short, hairy, grooved.
Leaves	opposite, ovate-lanceolate.
— Margin . .	remotely scolloped-dentate.
—— Dents . .	short.
——— Sinus . .	obtuse.
——— Sides . .	(exterior) straight, (interior) short at right ∠s with axis.
——— Vertices .	long, obtuse, callous.
— Base . . .	ovate, intire.
— Apex . . .	acute-angular.
— Surface . .	bullate, solitary-haired.
— Subface . .	tomentose.
— Nerves . . .	3 from base, prominent, directed to apex.
—— Branches .	prominent.
Flowers	solitary, axillary.
Pedicels . . .	very short, ½ length of calyx, covered with long, white hairs.
Bracteas . . .	2 at base of each flower, = tube of calyx, hairy.
Calyx	covered with long, adpressed, white hairs, inside and outside.
— Segments . .	acute-angular.
—— Sinus . . .	,, ,,
Corol	4-petaled.
— Petals . . .	in =, orbicular, subintire or waved.
—— Claw . . .	sub 0.
Stamens . . .	many, = pistil, shorter than petals, peridiscal in alveoles.
— Filaments . .	glab. tapering upwards.
— Anthers . .	yellow, basifixt.
—— Lobes . .	didymous, deeply furrowed each side, on an elliptic connector of the same substance as the filament.

Disk	flat, circular, closing mouth of calyx, white.
— Edge . . .	alveolous, receiving bases of stamens.
Pistil.	
— Ovary . . .	hid under the disk.
— Style . . .	short, cylindric.
— Stigma . . .	glab. = length of style, simple, clavate, obtuse-4-angled!!
Section	cruciform!
Floration . . .	1st June, 1822.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Rocky banks of French Broad River, Tennessee, near the warm springs.
Dissection . . .	f. 1. calyx, disk, and style. —2. stamen and anther, shewing the separation of its lobes by a connector. —3. The style and fixation of stigma cut across to shew its angles.

1. 2. 3. 4.

M.P. Travis lith.

Pub. by J. & A. Arch, Cornhill, June 2. 1823.

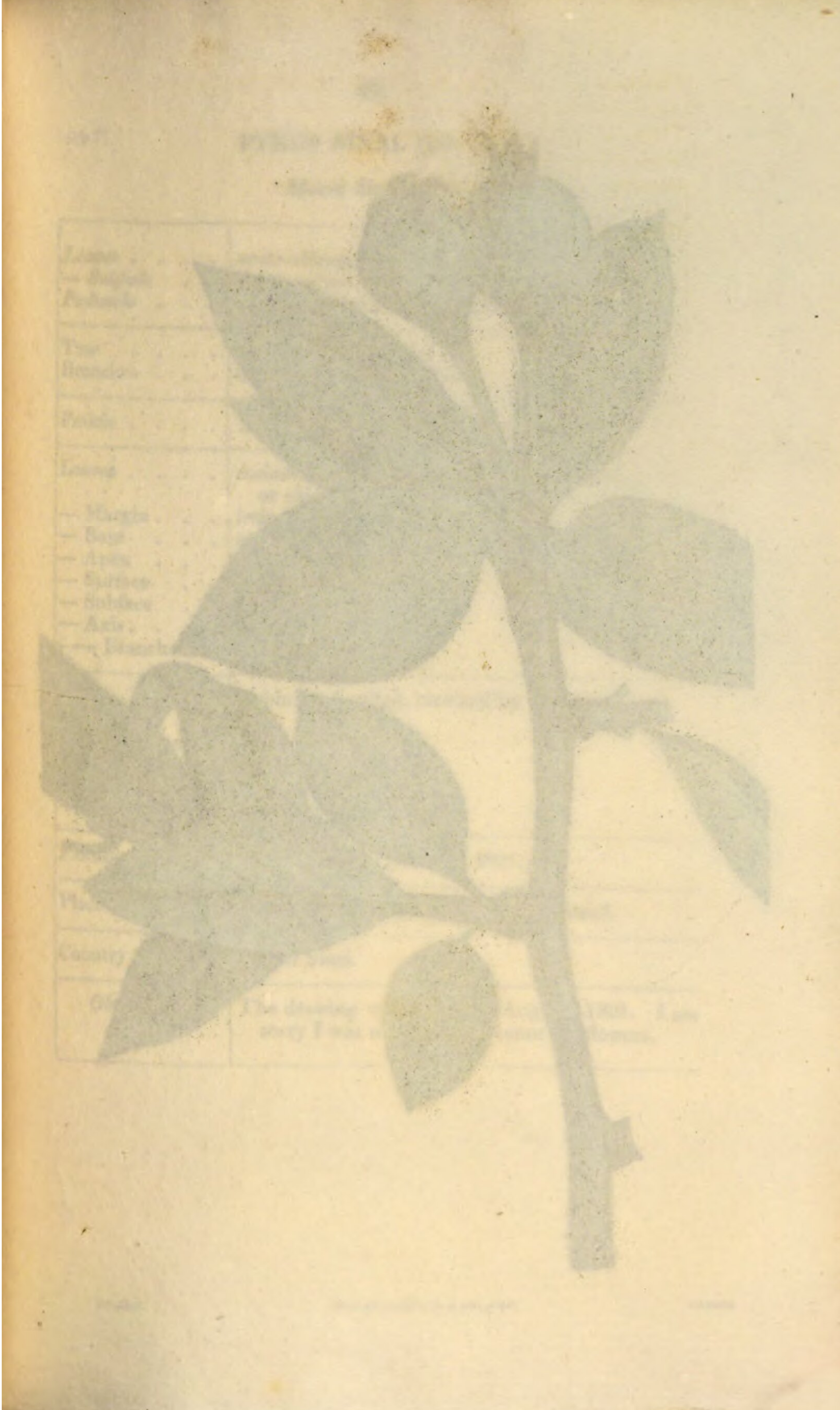
Waddell Sc.

PRUNUS SEROTINA. (W.)

American Bird Cherry.

Flowers . . .	*racemose.*
Raceme . . .	*lax.*
Leaves	⊙, *simply serrate.*
— *Serratures* . .	*(lower) subglandular.*
— *Subface* . .	*axis barbate towards the base.* (Ph.)
Tree	18-20.
Stem	2 F. diameter 4-inch.
— Bark . . .	rather crackt.
Branches & — Bark . .	glab. rather purplish-brown, warty.
Shoots	purplish-brown, glab. strewed with white warts.
Leaves	alternate, oblong-lanceolate.
— Margin . . .	minutely, incumbently, inequally serrate.
—— Serratures .	hooked inwards.
——— Sinus . .	acute.
——— Sides . .	(exterior) bowform, (interior) sub 0.
——— Vertices .	brown, short, sharpish.
— Base . . .	rather tapered.
— Apex . . .	shortly acuminate.
— Surface . .	dark green, smooth, glab.
— Subface . .	paler " "
— Axis . . .	prominent with a row of red hairs each side from the base to ½ its length!!
Raceme . . .	simple, erect, 3½ inch.
Peduncles . . .	glab. reddish.
— Pedicels . .	= flowers, glab. reddish.
Calyx	glab. 5-dentate.
— Dents . . .	short, obtuse, with a few pediceled glands.
—— Sinus . . .	obtuse.
Corol	5-petaled.
— Petals . . .	suborbicular, inequally crenate.
—— Claw . . .	short.
Stamens . . .	numerous, = petals, inserted in mouth of calyx.
— Filaments . .	glab. slender, subulate.
— Anthers . .	" medifixt.
—— Lobes . .	oblong, adnate, grooved.
Pistil	rather shorter than stamens.
— Ovary . . .	ovate, glab. free.
— Style . . .	cylindric, thick.
— Stigma . . .	simple, flat, with irregular and projecting margin.
Drupe	spheric, or subturbinate glab. punctured, = a pea.
— Nut	glab. with opposite sutures, subcompressed.
—— Kernel . .	white, filling the nut.

Floration . . .	25th May, 1822. (Fruit, October.)
Place	Arboretum, Kew.
Country . . .	Pennsylvania to Carolina.
Dissection . . .	f. 1. a drupe. —2. part of the flesh cut away to shew the nut. —3. longitudinal section of the nut and kernel. —4. kernel.



J.Hart.Del.

Pub.by.I.& A.Arch.Cornhill.July.1.1829.

W.Wallis.Sc.

49.

PYRUS SINAI. (Dh. nov.)

Mount Sinai Pear.

Leaves	*ovate-oblong, very intire.*
— *Subface* . .	*subtomentose.*
Peduncle . . .	*simple, tomentose, corymbose.* (Dh. nov.)
Tree	middling size, 20-25 F.
Branches . . .	dark-purple-brown, glab.
Petiole	= $\frac{1}{4}$ length of leaf, pubescent, sulcate above.
Leaves	coriaceous, alternate, lanceolate and oblanceolate, or elliptic.
— Margin . . .	intire.
— Base . . .	attenuated.
— Apex . . .	obtuse-angular.
— Surface . .	rather tomentose.
— Subface . .	densely „ .
— Axis	prominent, „ .
—— Branches .	obsolete.
Pome	turbinate, 5-celled, crowned by the calyx.
— Cells.	
—— Partitions .	thin, membranous.
—— Endocarp .	subosseous.
— Pippin . . .	1 in each cell.
—— Testa . .	cartilaginous.
Floration . . .	May. (Fruit, 17th Aug. 1821.)
Place	Lord Mansfield's, Kenwood, Hampstead.
Country . . .	Mount Sinai.
Observation.	The drawing was made in August, 1821. I am sorry I was not able to procure the flowers.

10.

PYRUS SINAL. (Dr. non.)

Mount Sinai Pear.

1.

2.

Mrs Transwood.

Pub. by J. & A. Arch. Cornhill July. 1. 1823.

Wood sc.

PYRUS SPECTABILIS. (W.)

Chinese Apple.

Leaves	*oval-oblong, serrate, smooth.*
Umbels	*sessile.*
etals (Claws) .	*longer than calyx.*
Style (Base) . .	*lanate* (W.)
Tree	30 F. branching nearly from the root.
— Trunk . . .	very short.
—— Branches .	brown, glab. warted and cicatrised, pendant.
Petiole	$1\frac{1}{2}$-inch ($\frac{1}{3}$=leaf) lirate-striate, grooved above, pubescent.
Leaves	alternate, elliptic-lanceolate.
— Margin . . .	subequally adpresst-serrate (imbricate-serrate).
—— Serratures .	acute.
——— Sinus . .	„
——— Sides . .	(exterior) subrectilinear, (interior) sub 0.
——— Vertices .	incrassated.
— Base . . .	tapered.
— Apex . . .	acute.
— Surface . . .	dark green, shining, glab.
— Subface . .	(parenchyma) paler, „
— Axis	prominent, tomentose.
—— Branches .	tomentose, anastomosing.
Subumbel . . .	2-3-flowered, sessile.
Peduncles . . .	thickened upwards, $1\frac{1}{2}$ inch, glab.
Calyx	red, glab. 5-fid.
— Segments . .	lanceolate, acute.
—— Margin . .	ciliate.
Corol	pink-colored, 5-petaled.
— Petals . . .	oval, crenate at apex.
—— Claw . . .	short.
Stamens . . .	numerous, shorter than petals, inserted on mouth of calyx.
— Filaments . .	glab. slender, filiform.
— Anthers . .	oblong, medifixt.
—— Lobes . .	adnate whole length, furrowed at sides.
Pistils.	
— Ovaries . . .	hid in the calyx.
— Styles . . .	6, filiform, rather thicker upwards, pubescent below, and united in a tube.
— Stigmas . . .	simple, with fungous clubbed apices.
Pome	irregular, deformed, subelliptic, 5-celled, glab. red-cheeked.

— Cells . . .	5, cartilaginous, 3 of which 1-pippined and 2 abortive.
— Pippins . . .	cartilaginous.
Floration . . .	May. (Fruit, 24th Sept. 1821.)
Place	Arboretum, Kew.
Country . . .	China.
Dissection . . .	f. 1. longitudinal section of pome. —2. transverse „ , with its 5 cells.

Mrs Bruvis Del.

Pub.by J. & A. Arch. Cornhill. July 1 1823.

Wallis.

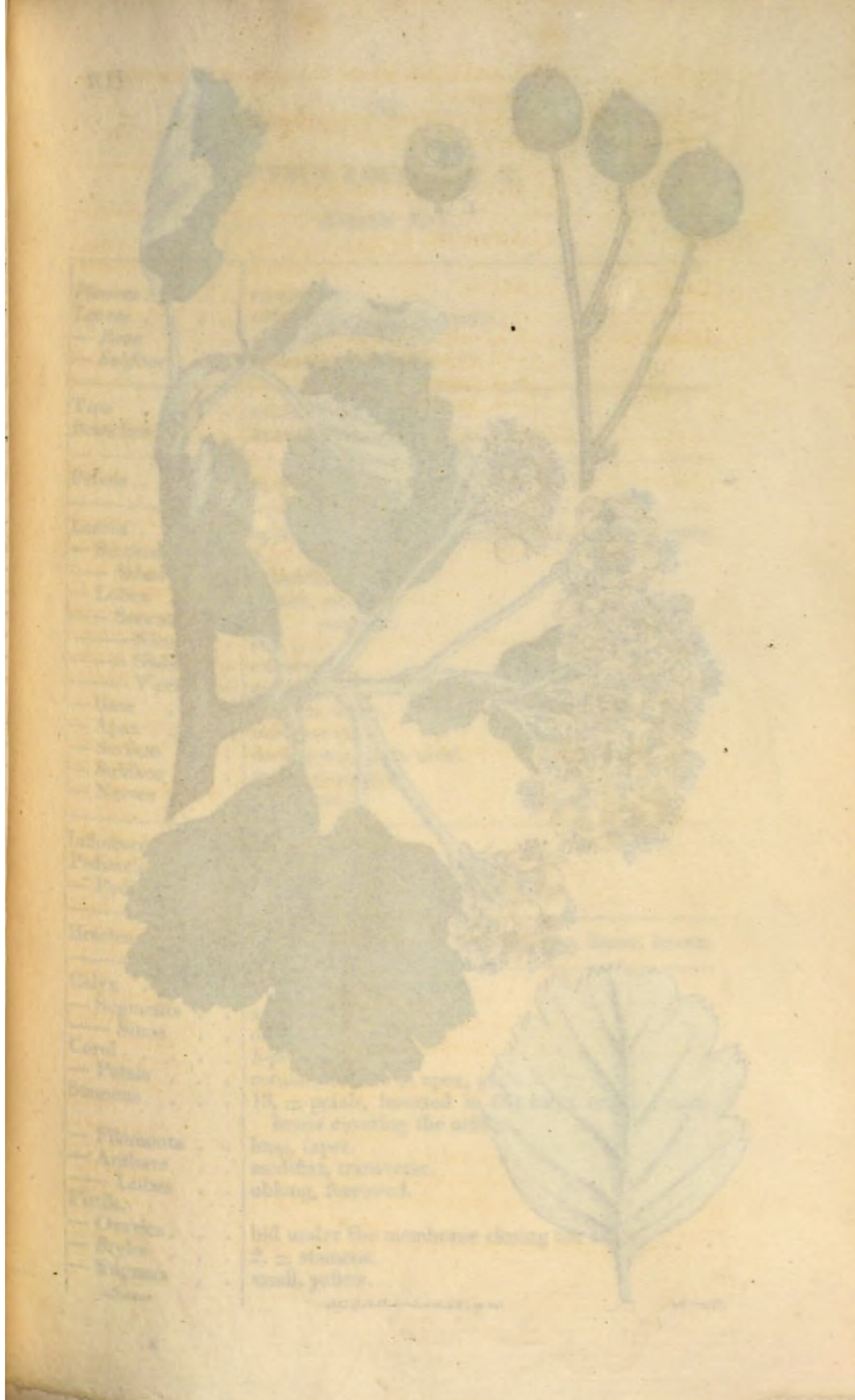
51.

PYRUS BACCATA. (W.)

Small-fruited or Cherry Crab.

Leaves	*equally serrate.*
Peduncles . . .	*conferted.*
Calyxes . . .	*deciduous.*
Pome	*berried.* (W.)
Tree	20-30 F.
Stem	2 F. diameter 9 inches, with crackt, foliaceous bark.
— Branches . .	glab. olive-brown, warty, pendant.
Petiole	long, sub = leaf, grooved above, set with sparsed, solitary, white hairs.
Leaves	in pairs on the spurs or alternate, elliptic.
— Margin . .	subequally adpresst-serrate.
—— Serratures .	obtuse and acute-angled.
——— Sinus . .	acute.
——— Sides . .	(exterior) excurved, (interior) sub 0.
——— Vertices .	naked.
— Base . . .	inequally ovate (one side lower).
— Apex . . .	acute.
— Surface . .	dark green, glab.
— Subface . .	paler „ , with minute, pale spots.
— Axis & —— Branches	prominent, glab.
Inflorescence . .	axillary, 1-2 flowered.
Pedicels . . .	¾-1 inch.
Calyx	cylindric, tomentose.
— Segments . .	5, lanceolate, acute, tomentose.
—— Sinus . . .	subobtuse.
Corol	5-petaled.
— Petals . . .	white, elliptic, intire.
Stamens . . .	numerous, inserted in tube of calyx.
— Filaments . .	awled, covered with solitary, white, horizontal hairs.
— Anthers . .	glab. medifixt.
—— Lobes . .	oblong, adnate, grooved.
Pistils.	
— Ovaries . . .	hid in the calyx.
— Styles . . .	5, filiform, rather thicker upwards.
— Stigmas . . .	small, simple, fungous (puckered).
Pome	umbilicated at both ends, spheric, glab. yellow, red-cheeked.
— Apex . . .	closed and naked (the calyx soon falling off).

— Cells . . .	5, verticillate round the axis, membranous-cartilaginous.
— Pippins . . .	1-3 in each cell, ovate, plane-convex.
—— Episperm .	brown, cartilaginous.
Floration . . .	May. (Fruit, 17th Sept. 1821.)
Place	Arboretum, Kew.
Country . . .	Siberia.
Dissection . .	f. 1. calyx and stamens. —2. expanded flowers with stamens, —3. transverse section of pome. —4. longitudinal „ .



Pl. 52.

J Hart. Del.

Pub by J & A Arch. Cornhill July 1813.

Waddell Sc.

52.

PYRUS EDULIS. (W.E.)

Eatable Sorb.

Flowers	*corymbose.*
Leaves	*oblong, inequally 2-serrate.*
— *Base* . . .	*cuneate.*
— *Subface* . .	*tomentose.* (W.E.)
Tree	small, 10-12 F.
Branches . . .	brown, glab. warty.
Petiole	= ½ length of leaf.
Leaves	opposite, orbicular-cuneate, incised-serrate at apex.
— Section . . .	⅓.
—— Sides . . .	subrectilinear.
— Lobes . . .	obtuse, serrate.
—— Serratures .	„ -angular.
——— Sinus . .	sub „ .
——— Sides . .	excurved.
——— Vertices .	naked.
— Base . . .	cuneate, intire.
— Apex . . .	subtruncate.
— Surface . .	dark green, glab. nitid.
— Subface . .	snowy-tomentose.
— Nerves . . .	prominent.
Inflorescence . .	corymbose.
Peduncles & — Pedicels	tomentose.
Bracteas . . .	on the peduncles and pedicels long, linear, brown.
Calyx	woolly, 5-fid.
— Segments . .	acute.
—— Sinus . .	obtuse.
Corol	5-petaled.
— Petals . . .	rotund, crenate at apex, glab.
Stamens . . .	19, = petals, inserted in the calyx under a membrane covering the orifice.
— Filaments . .	long, taper.
— Anthers . .	medifixt, transverse.
—— Lobes . .	oblong, furrowed.
Pistils.	
— Ovaries . . .	hid under the membrane closing the calyx.
— Styles . . .	2, = stamens.
— Stigmas . .	small, yellow.

Pome	subglobular, rather striate, 2-celled.
— Cells . . .	1 fertile and 1 abortive.
Floration . . .	4th June, 1821.
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	France.
Dissection . . .	f. 1. Transverse section of pome with its 2 cells, one of which is abortive.

TH. et D.del.

Pub. by J. & A. Arch, Cornhill, July. 1.1823.

Weddell Sc.

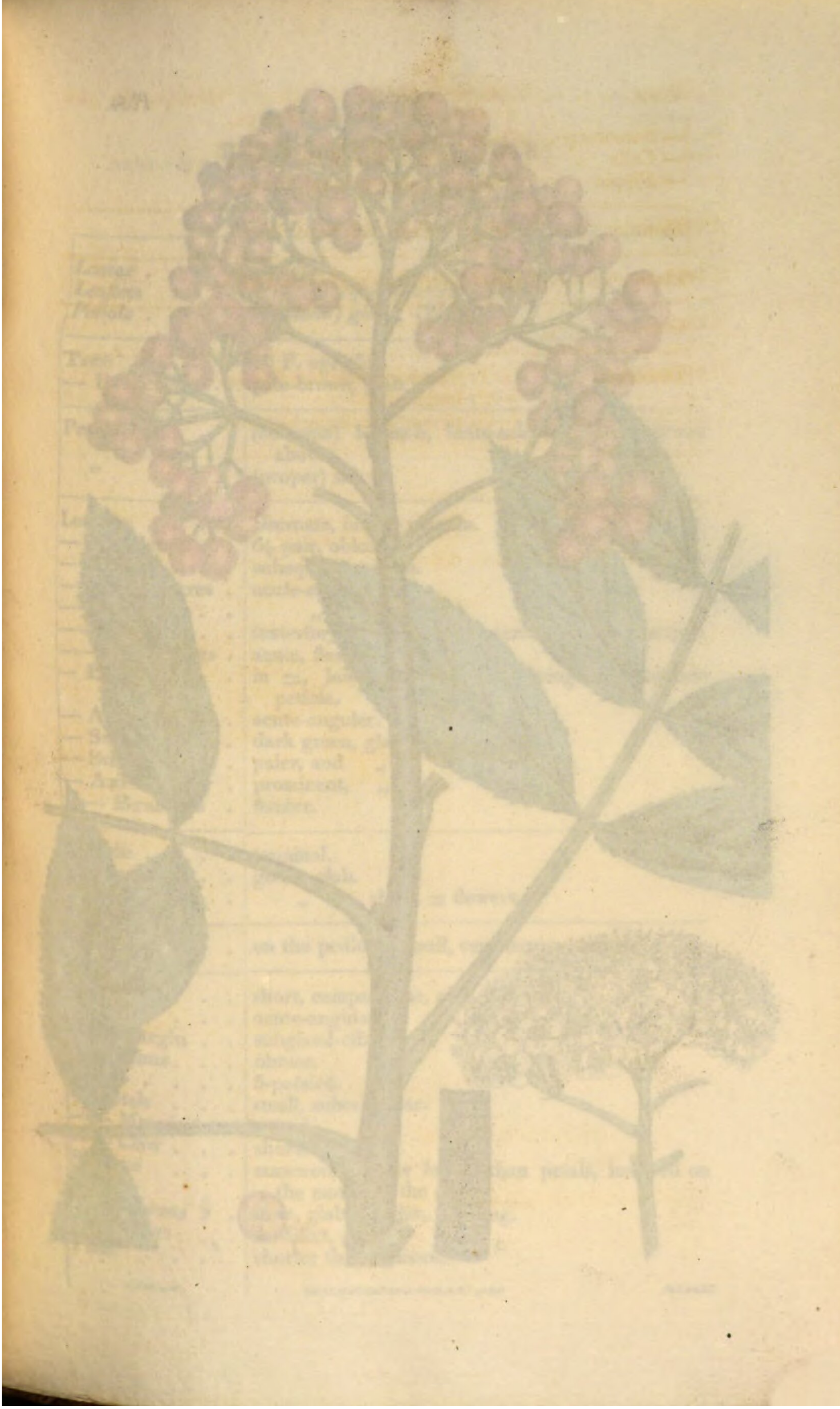
53.

PYRUS SORBIFOLIA. (Bosc.)

Sorb-leaved Pear.

Plant	*unarmed.*
Leaves	*pinnate or pinnatifid, subinequally serrate, glab.!*
— Lobe . . .	*(terminal) large, sub 3-fid.*
Flowers	*corymbose.* (Encyclopédie.)
Shrub	6-8 F. spreading, bushy.
Branches . . .	dark purple-brown, glab.
Petiole	(common) glab. subsericeous above.
Leaves	alternate, 4 inches, pinnatifid-impair-pinnate.
— Leaflets . .	(of two lower pair) sessile, oblong (of next 1 or 2 pair) confluent, all incised-serrate.
—— Impair . .	much longer, confluent with next pair, incised-serrate.
——— Sinus . .	variously shallow and deep.
— Margin . . .	obtusely serrate.
—— Serratures.	
——— Sinus . .	acute.
——— Sides . .	excurved.
——— Vertices .	obtuse.
— Base . . .	narrow-ovate.
— Apex . . .	obtuse, (of impair) acuminate.
— Surface . .	dark green, glab.
— Subface . .	paler and ,, !!
— Axis . . .	prominent ,,
—— Branches .	obsolete.
Corymb . . .	many-flowered.
Peduncles & Pedicels .	glab.
Calyx	glab. 5-dentate.
— Dents . . .	angular.
—— Margin . .	glandular.
—— Sinus . . .	obtuse.
Corol	5-petaled.
— Petals . . .	orbicular, subcrenate.
—— Claw . . .	short.
Stamens . . .	numerous, = petals, inserted in the calyx.
— Filaments . .	awled.
— Anthers . .	medifixt, oblong.
Pistils	5, issuing from a tuft of hairs, filiform, shorter than stamens.
— Ovary . . .	hid in the calyx.
— Stigma . . .	simple, puckered.

Pome	elliptic, subtruncate above, black-purple, glab. closed by segments of calyx.
— Sarcocarp . .	juicy, reddish.
— Cells . . .	5, verticillate round the centre.
— Pippin . . .	oblong, rather pointed, brown.
Floration . . .	May. (Fruit, 8th Sept. 1821.)
Place	Mr. James Lee's, Hammersmith.
Country . . .	?
Dissection . . .	f. 1. transverse section of pome. —2. longitudinal „ —3. pippin (cartilaginous seed).



J Hart Del.

Bibby J. & A. Arch. Cornhill. July 1.1822.

Weddell Sc.

54.

PYRUS AMERICANA. (W. E.)

Purple-berried Sorb.

Leaves	*pinnate.*
Leaflets . . .	*acute, subequally serrate, glab.*
Petiole	*(common) glab.* (W. E.)
Tree	10 F. upright.
— Branches . .	pale-brown, glab.
Petiole	(common) 11 inch, lirate-sulcate, glab. grooved above.
”	(proper) sub 0.
Leaves	alternate, impair-pinnate.
— Leaflets . .	$6\frac{1}{2}$ pair, oblong.
— Margin . . .	subequally serrate.
—— Serratures .	acute-angular.
——— Sinus . .	”
——— Sides . .	(exterior) subexcurved, (interior) short, incurved.
——— Vertices .	acute, fleshy.
— Base . . .	in =, lower side nearly joining the common petiole.
— Apex . . .	acute-angular.
— Surface . . .	dark green, glab.
— Subface . .	paler, and ”
— Axis	prominent, ”
—— Branches .	fainter.
Panicle	terminal.
Peduncle . . .	green, glab.
Pedicel . . .	” , short, = flowers.
Bracteas . . .	on the pedicels, small, very narrow, brown.
Calyx	short, campanulate, glab. 5-dentate.
— Dents . . .	acute-angular.
—— Margin . .	subgland-ciliate.
—— Sinus . . .	obtuse.
Corol	5-petaled.
— Petals . . .	small, suborbicular.
—— Margin . .	waved.
—— Claw . . .	short.
Stamens . . .	numerous, rather longer than petals, inserted on the mouth of the calyx.
— Filaments , .	in =, glab. slender, tapering.
— Anthers . .	medifixt, glab.
Pistil	shorter than stamens.

— Ovaries . . .	hid in the calyx.
— Styles . . .	3, pubescent $\frac{1}{2}$ way from base.
— Stigmas . .	simple, small, projecting, fungous.
Pome	subcompressed-spheric, crowned by the calyx.
— Pippins . . .	in =, 4, round an imaginary axis.
Floration . . .	June. (Fruit, 10th Sept. 1821.)
Place	Messrs. Whitley and Co's, Fulham.
Country . . .	Canada.
Dissection . . .	f. 1. transverse section of pome. —2. pippin. —3. the bark of a branchlet.

1.

2.

Pub.d by J.&C.Arch. Cornhill. July 1.1843.

55.

MESPILUS ERIOCARPA. (D. C.)

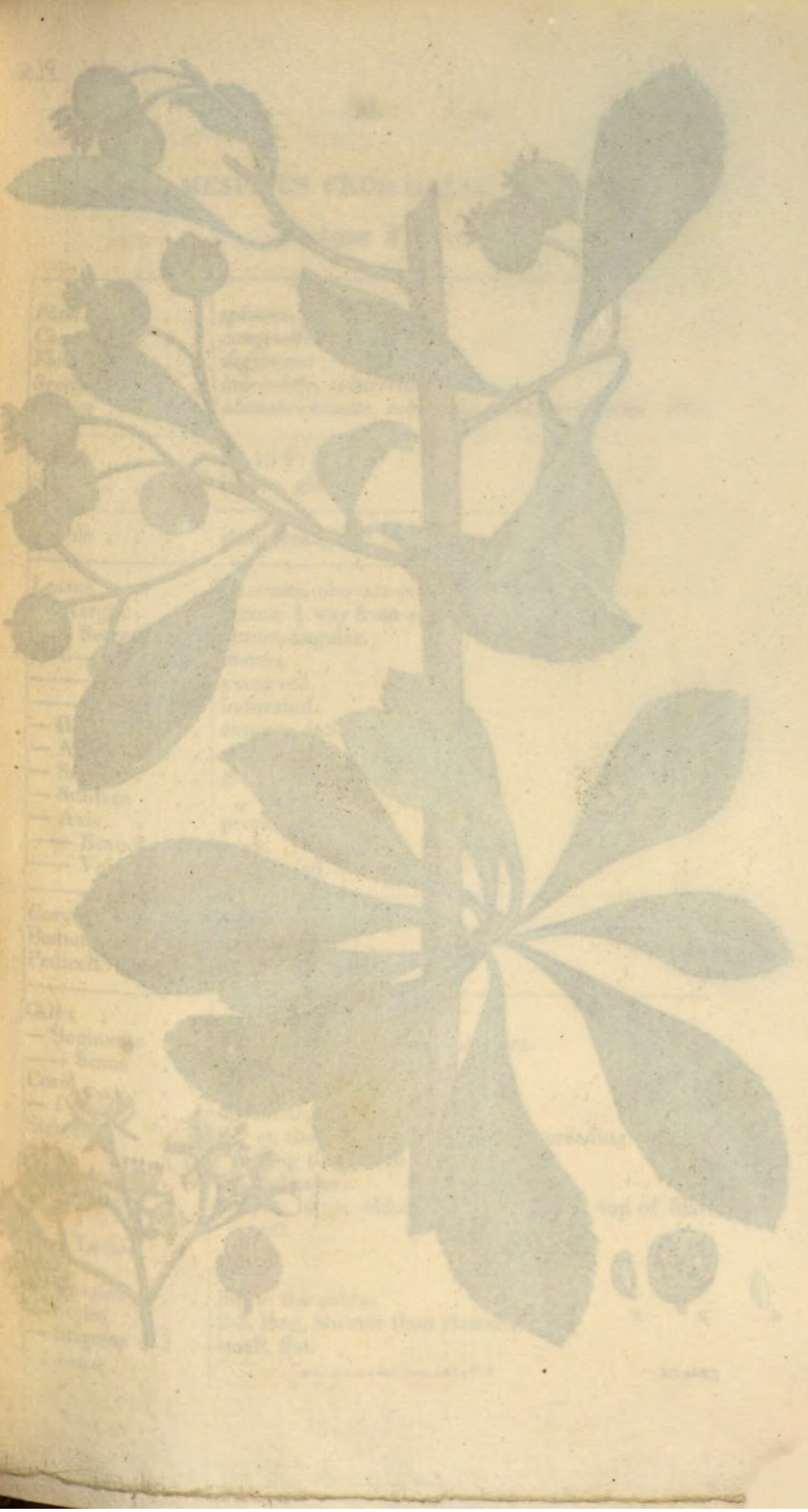
Woolly-capsuled Mespilus.

Plant	*unarmed.*
Leaves	*ovate, obtuse, very intire.*
— *Subface* . .	*tomentose.*
Peduncle . . .	*3-5-flowered.*
Germen . . .	*lanate.*
Berry	*5-seeded.* (D. C.)
Shrub	low.
— Branches . .	dark-brown, glab. stiff.
Petiole	short, tomentose.
Leaves	alternate on the fruit bearing shoots, subrotund.
— Margin . . .	intire.
— Base . . .	rather narrower than apex.
— Apex . . .	obtuse, mucronate.
— Surface . . .	glab.
— Subface . .	paler, tomentose.
— Axis	prominent, „ .
—— Branches .	vanishing, „ .
Inflorescence . .	corymbose.
Peduncles & — Pedicels .	tomentose.
Bracteas . . .	½ way on the pedicels, small, linear, acute.
Calyx	5-dentate, tomentose.
— Dents . . .	acute.
—— Sinus . .	obtuse.
Corol	5-petaled.
— Petals . . .	subrotund, crenate-undulate.
—— Claw . . .	short.
Stamens . . .	10, inserted 2 at base of each dent of calyx.
— Filaments . .	flat, tapering, glab.
— Anthers . .	medifixt, subrotund.
—— Lobes . .	adnate.
Pistil.	
— Ovaries . . .	tomentose! hid in the calyx.
— Styles . . .	3, emerging from a woolly base.
— Stigmas . .	scarcely apparent.
Drupoid . . .	orbicular, tomentose, 5-celled, 4 of which abortive.
Floration . . .	6th July, 1821.
Place	Messrs. C. Loddiges and Sons', Hackney.
Country . . .	Eastern Countries.
Dissection . . .	f. 1. drupoid, intire. —2. transverse section of the drupoid, one cell only of which is fertile.

MESPILUS HELOCARPA (D. C.)

Woolly-capsuled Mespilus.

Plant	evergreen.
Leaves	ovate, oblong, very shiny.
— Stalk . . .	foliaceous.
Flowers . . .	3-5-flowered.
Corona . . .	large.
Berry	3-seeded (D. C.)
Shrub	low.
— Branches . .	short-thorny, glabrous.
Fruit	about twenty-eight.
Leaves	alternate on the short bearing shoots, subsessile.
— Margin . . .	entire.
— Base	rounded, narrowing into short petiole.
— Apex	obtuse.
— Surface . . .	glabrous.
— Nerves . . .	pinnate, inconspicuous.
— Size	2 inches long, 1 broad.
— Branches . .	spreading.
Inflorescence .	corymbose.
Peduncles & Pedicels	tomentose.
Bracteas . . .	4 near on the pedicels, small, linear, acute.
Calyx	5-cleft, tomentose.
— Lobes . . .	acute.
— Sinus . . .	obtuse.
Corol	5-petalled.
— Petals . . .	suborbicular, crenate-undulate.
— Claw . . .	short.
Stamens . . .	10, inserted at the base of each lobe of calyx.
— Filaments . .	flat, tapering, glab.
— Anther . . .	purplish, oval.
— Lobes . . .	2.
Pistil	
— Ovaria . . .	connected, hairy in the calyx.
— Styles . . .	3 cross-ways, hairy a woolly-base.
— Stigmas . . .	scarcely expanded.
Ovules	ovate-oblong; commissure, 5-called, 4 of which abortive.
Flowering . . .	6th July, 1821.
Place	Messrs. C. Lodding and Sons', Hackney.
Country . . .	Eastern Countries.
Discussion . . .	1. 1. dropsil. intine.
	—3. transverse section of the dropsil. one cell only of which is fertile.



J. Hart. Del.

Pub. by J. & A. Arch. Cornhill. July. 1. 1823.

Weddell Sc.

MESPILUS CRUS GALLI. (W.)

Cockspur Thorn.

Plant	*spinous.*
Corymb	*composite.*
Flowers	*digynous.*
Sepals	*lanceolate, subserrate.*
Leaves	*obovate-cuneate, subsessile, nitid, coriaceous.* (Ph.)
Shrub	10-15 F.
Stem	brown, glab.
Petiole	short, margined by decurrence of leaf.
Leaves	alternate, obovate-cuneate.
— Margin . . .	serrate $\frac{1}{2}$ way from apex.
—— Serratures .	obtuse-angular.
——— Sinus . .	obtuse.
——— Sides . .	excurved.
——— Vertices .	indurated.
— Base	cuneate, intire.
— Apex	obtuse.
— Surface . . .	glab. shining.
— Subface . .	„ , paler.
— Axis	prominent.
—— Branches .	sunk.
—— Veins . .	reticulated.
Corymb . . .	compound.
Peduncles & Pedicels	herbaceous, glab.
Calyx	glab. 5-fid.
— Segments . .	long, lanceolate, acute, subintire.
—— Sinus . .	obtuse.
Corol	5-petaled.
— Petals . . .	orbicular, intire.
Stamens . . .	8-9 on the edge of a membrane spreading and covering the mouth of calyx.
— Filaments . .	long, slender.
— Anthers . .	purple, large, oblong, transversed on top of filament.
—— Lobes . .	united.
Pistil.	
— Ovaries . . .	hid in the calyx.
— Styles . . .	2-3, long, shorter than stamens.
— Stigmas . .	small, flat.

Drupoid . . .	globular, 2-nutleted.
— Nutlet . . .	plane-convex, grooved outside, containing 1 kernel.
Floration . . .	18th June, 1821.
Place	Mr. Jenkins's Botanic Garden, New Road.
Country . . .	Canada to Carolina.
Dissection . . .	f. 1. drupoid, with part of the epicarp cut away to shew the situation of the nutlets. —2. transverse section of the drupoid, one nutlet abortive. —3. longitudinal section of nutlet —4. kernel.

241. MESPILUS PU

Spotted Ar

I. Hart Del.

Pub. by J. & A. Arch. Cornhill. August 1. 1811.

W. Lizars Sc.

57.

MESPILUS PUNCTATA. (W.)

Spotted-fruited Mespilus.

Plant	*spinous and unarmed.*
Calyx	*villous.*
— Segments . .	*subulate, intire.*
Berry	*subglobose.*
— Umbilic . .	*depressed.*
Leaves	*obovate-cuneate, subplicate, glab. incised, serrate, decurrent on the petiole.* (Ph.)
Tree	20 F. with a flattish head.
— Trunk . . .	6 F.
—— Bark . . .	rimose, peeling.
—— Branches .	spreading and hanging to the ground.
——— Expansion	30-40 F.
——— Bark . .	glab. pale brown.
Petiole	glab. or 0, the leaf decurring to its insertion.
Leaves	alternate, subrhomboid, incised-serrate.
— Section . . .	shallow.
—— Sinus . . .	acute.
— Lobes . . .	acute-angular.
—— Margin . .	inequally-serrate.
——— Serratures	obtuse-angular.
———— Sinus .	obtuse and acute-angular.
———— Sides .	(exterior) excurved, (interior) short in or excurved.
———— Apices.	brown, acute indurations.
— Base . . .	acute-angular, intire.
— Apex . . .	„ „ .
— Surface . . .	dark green, glab.
— Subface . .	(parenchyma) glab. with minute granules.
— Axis	prominent, long-haired.
—— Branches .	alternate, „ .
Inflorescence.	corymbose.
Peduncles & Pedicels	with few, long, white hairs.
Calyx	5-fid. long-white-haired.
— Segments . .	lanceolate, linear, hairy.
—— Margin . .	intire! (eglandular).
—— Sinus . .	obtuse-angular.
Corol	5-petaled.
— Petals . . .	orbicular, inequally crenate.
—— Claw . . .	very short.
Stamens . . .	numerous, shorter than petals, inserted at the mouth of calyx.

— Filaments . .	glab. awled.
— Anthers . .	oblong, medifixt, pale pink-color.
—— Lobes . .	adnate.
Pistil.	
— Ovaries . . .	hid in the calyx.
— Styles . . .	4, filiform, = stamens.
— Stigmas . .	simple, small, spongy.
Drupoid . . .	glab. punctate! crowned by the calyx.
— Nutlets . . .	3, plane-convex, lapideous, closed together by the plane sides, 1-celled.
—— Kernel . .	one.
Floration . . .	18th May. (Fruit, 3d Sept. 1821.)
Place	Arboretum, Kew.
Country . . .	Virginia and Carolina.
Dissection . . .	f. 1. drupoid with persisting calyx. —2. „ „ part of the epicarp cut away. to shew the 3 nutlets, round an ideal axis. —3. a nutlet.

Mrs Travis Del. Pub. by J. & A. Arch. Cornhill. August 1. 1823. Wed Sculp.

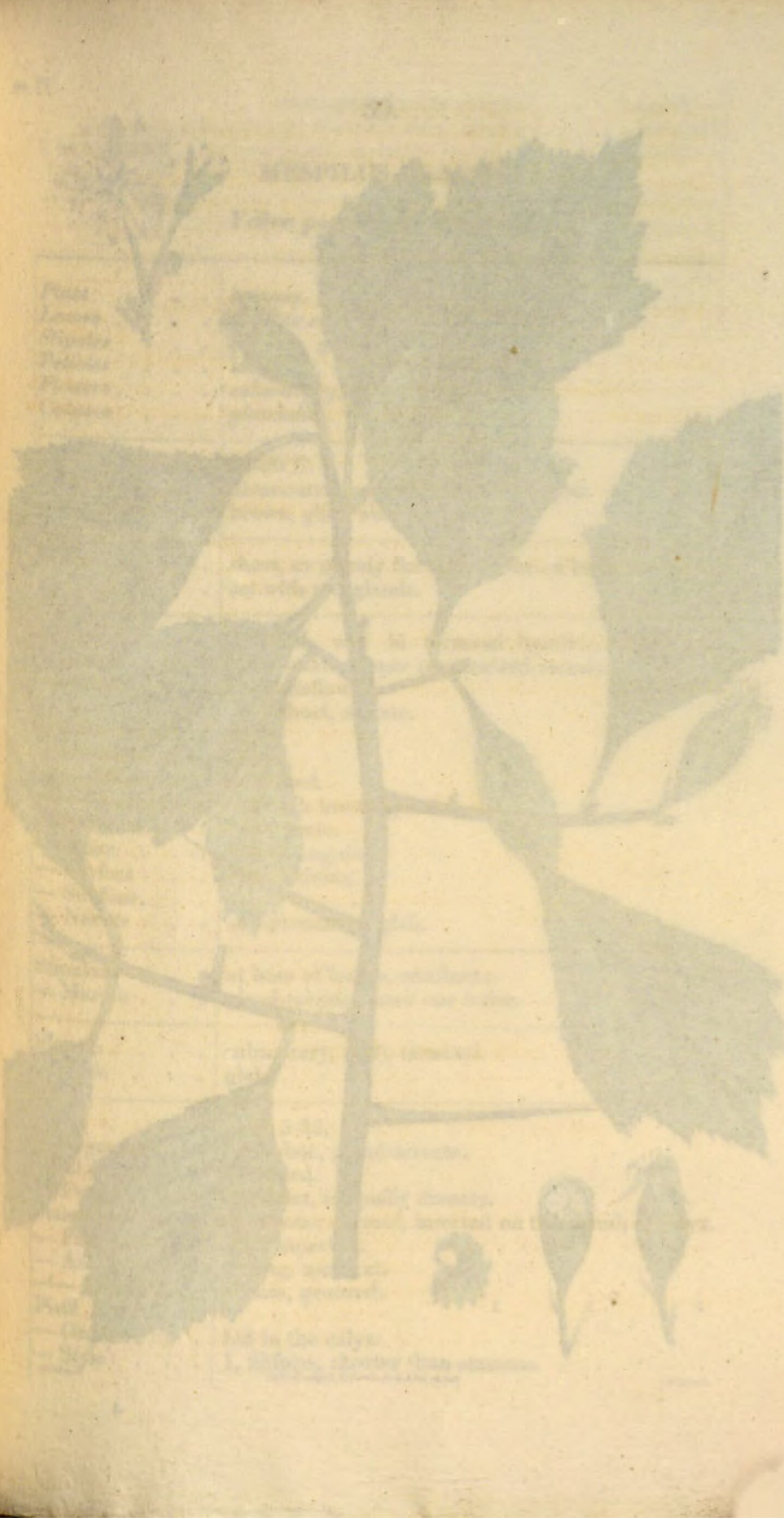
58.

MESPILUS GLANDULOSA. (W.)

Hollow-leaved Mespilus.

Plant	*spinous.*
Petioles, Stipules, & Calyx . .	*glandular.*
Leaves	*obovate-cuniform, angular, glab. shining.*
Berry	*oval, 5-seeded.* (W. E.)
Shrub	large.
— Bark . . .	pale brown, glab. warty.
— Branchlets . .	reddish.
Petiole	glab. grooved, = ½ length of leaf, glandular on the edges.
Leaves	alternate, rhomboid, incised-serrate upwards.
— Section . . .	acute.
— Lobes . . .	3-4, acute, on each side the upper half of leaf and serrate.
—— Serratures .	inequally, acute.
——— Sinus . .	acute.
——— Sides . .	excurved.
——— Vertices .	obtuse, tipt with red glands.
— Base . . .	obtuse-angular.
— Apex . . .	pointed.
— Surface . . .	glab. shining.
— Subface . .	„ , reticulated-venose.
— Nerves . . .	„ , prominent.
Inflorescence . .	corymbose.
Bracteas . . .	semilunar.
— Margin . .	one closely glanded and the other naked.
Calyx	glab. 5-fid.
— Segments . .	long-lanceolate, acute, intire, reflected.
—— Margin . .	glandular.
—— Sinus . .	obtuse.
Corol	5-petaled.
— Petals . . .	orbicular, inequally crenate, or lanceolate-undulate.
Stamens . . .	7-8, inserted on the edge of a membrane covering mouth of calyx.
— Filaments . .	subulate, shorter than petals.
— Anthers . .	oblong, medifixt.
—— Lobes . .	adnate, furrowed.
Pistil.	

— Ovaries . . .	hid in the calyx.
— Styles . . .	3, filiform, shorter than stamens.
— Stigmas . . .	simple, small, puckered.
Drupoid . . .	red, ovate, crowned by persisting calyx.
— Nutlets . . .	4, verticillate, plane-convex, 1-kerneled.
Floration . . .	9th May. (Fruit, Oct.)
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	Canada and on the Allegany Mountains.
Dissection . . .	f. 1. drupoid, with part of the epicarp cut away to shew the 4 nutlets. —2. transverse section of the drupoid. —3. nutlet. —4. „ , transversely sected.



I. Hart Del.

Pub. by J. & A. Arch. Cornhill. August 1. 1823.

Weddell Sc.

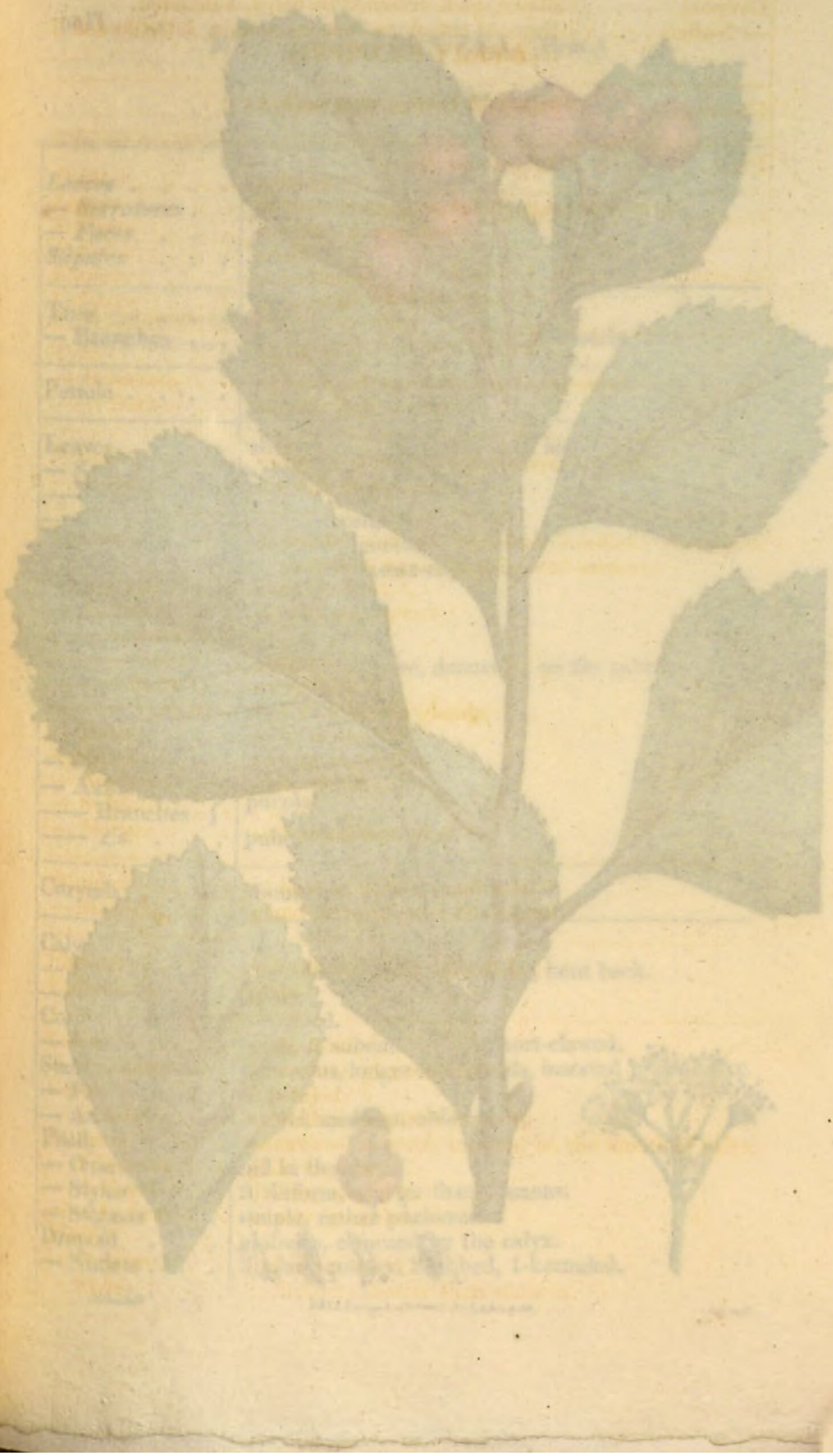
59.

MESPILUS FLAVA.

Yellow pear-berried Mespilus.

Plant	*spinous.*
Leaves	*obovate-cuneate, subulate, crenate-serrate.*
Stipules . . .	*cordate, glandular.*
Petioles . . .	*short.*
Flowers	*subsolitary.*
Calyxes . . .	*glandular.* (Ph.)
Tree	14-20 F.
— Branches . .	divaricated, spreading to the ground.
—— Bark . . .	brown, glab. warty.
Petiole	short, or merely the decurrence of leaf.
— Edge . . .	set with red glands.
Leaves	alternate and in terminal bundles, rhomboid-spatulate, upper part incised-serrate.
— Section . . .	very shallow.
— Lobes . . .	very short, serrate.
—— Serratures.	
——— Sinus . .	acute.
——— Sides . .	excurved.
——— Vertices .	tipt with brown glands.
— Base . . .	long, acute.
— Apex . . .	obtuse-angular.
— Surface . . .	glab. shining.
— Subface . . .	„ „ .
— Nerves . . .	sub-prominent, glab.
Stipules . . .	at base of leaves, semilunar.
— Margin . . .	gland-serrate, inner one intire.
Flowers	subsolitary, (1-2), terminal.
Pedicels . . .	glab.
Calyx	glab. 5-fid.
— Segments . .	lanceolate, gland-serrate.
Corol	5-petaled.
— Petals . . .	orbicular, inequally crenate.
Stamens . . .	numerous, = corol, inserted on the mouth of calyx.
— Filaments . .	glab. tapering.
— Anthers . .	oblong, medifixt.
—— Lobes . .	adnate, grooved.
Pistil.	
— Ovaries . . .	hid in the calyx.
— Style . . .	1, filiform, shorter than stamens.

— Stigma . . .	simple, scarcely apparent.
Drupoid . . .	elliptic, glab. crowned by calyx, 4-nutleted.
— Nutlets . . .	disposed round an imaginary axis, 1 fertile and 3 abortive.
Floration . . .	13th May. (Fruit, 3d Sept. 1821.)
Place	Arboretum, Kew.
Country . . .	Virginia to Carolina.
Dissection . . .	f. 1. stipule. —2. drupoid and calyx. —3. „ transversely sected, shewing the 4 nutlets, one only fertile.



J.Hart. Del.

Pub.by J.R.A.Arch. Cornhill. August. 1.1821.

Wood.ll.Sc.

MESPILUS PURPUREA. (Bosc.)

Purple Mespilus.

Leaves	*broadly lobate or incised.*
— *Serratures* . .	*glandular.*
— *Faces* . . .	*glab.*
Stipules . . .	*subcircinnate, serrate-glandular.* (Enc.)
Tree	10 F.
— Branches . .	glab. brown-purple, warty, obsoletely ridged.
Petiole	short, glab.
Leaves	alternate, rhomboid, incised, inequally dentate.
— Section . . .	shallow.
—— Sinus . .	acute.
—— Sides . . .	subexcurved, intire.
— Lobes . . .	inequally dentate.
—— Dents . .	obtuse and acute-angular.
——— Sinus . .	acute.
——— Sides . .	excurved.
——— Vertices .	sharpish.
— Base . . .	attenuated, intire, decurrent on the petiole.
— Apex . . .	obtuse-angular.
— Faces . . .	rugose.
— Surface . . .	glab.
— Subface . . .	„ , paler.
— Axis & —— Branches	purple-red, glab.
—— ∠s . . .	pubescent.
Corymb . . .	about 8-flowered.
Calyx	glab.
— Segments . .	lanceolate, rarely denticulate, bent back.
—— Sinus . .	obtuse.
Corol	5-petaled.
— Petals . . .	circular, subemarginate, short-clawed.
Stamens . . .	numerous, longer than petals, inserted in the calyx.
— Filaments . .	awled.
— Anthers . .	purple, medifixt, oblong.
Pistil.	
— Ovaries . .	hid in the calyx.
— Styles . . .	2, filiform, shorter than stamens.
— Stigmas . .	simple, rather puckered.
Drupoid . . .	globular, crowned by the calyx.
— Nutlets . . .	3, plane-convex, 2-ribbed, 1-kerneled.

Floration . . .	May. (Fruit, Aug. 1821.)
Place	Mr. Jenkins's Botanic Garden, New Road.
Country . . .	?
Dissection . . .	f. 1. drupoid, the epicarp cut away, with nutlets and persisting calyx. —2. nutlet. —3. „ , transversely sected. —4. „ , longitudinally „ —5. kernel.
Observation.	It is called M. sanguinea in the gardens, but is very different from the Pyrus sanguinea of Pursh.

61.

MESPILUS PYRIFOLIA. (W.)

Pear-leaved Mespilus.

Plant	*spinous or naked.*
Leaves	*ovate-elliptic, incised-serrate, subplicate, subhirtous.*
Calyx	*subvillous.*
— Segments . .	*linear-lanceolate, serrate.*
Flowers	*3-gynous.* (W.)
Tree	10-12 F.
— Branches . .	olive, glab.
Petiole	0, or only decurrence of leaf.
Leaves	alternate, rhomboid, upper part incised-dentate.
— Section . . .	shallow, obtuse-angular.
— Lobes . . .	dent-like.
—— Margin . .	dentate.
——— Dents . .	obtuse and acute-angular.
——— Sides . .	excurved.
———— Vertices .	callous.
— Base . . .	acute-angular, intire.
— Apex . . .	„ .
— Surface . .	scabrous and set with solitary, fleshy hairs.
— Subface . .	pubescent!!
— Axis . . .	prominent.
—— Branches .	alternate, with fork-like divisions.
Corymb . . .	many flowered.
Peduncles & Pedicels .	with projecting white hairs, herbaceous.
Bracteas . . .	a little below the flowers, long, pink, subserrate.
— Margin . . .	glandular.
Calyx	sericeous, oblong, 5-parted.
— Segments . .	reflected, gland-serrate.
—— Sinus . . .	obtuse.
Corol	5-petaled.
— Petals . . .	orbicular, glab.
—— Margin . .	repand.
Stamens . . .	numerous, = petals, inserted on the edge of a membrane covering the mouth of calyx.
— Filaments . .	glab. subulate.
— Anthers . .	subdeltoid, medifixt, red, glab.
—— Lobes . .	united.
Pistil.	
— Ovaries . . .	hid in the calyx.
— Styles . . .	1-3, filiform.

— Stigmas . .	rather thicker than style, 1-4-fid.
Drupoid . . .	elliptic, 4-nutleted.
— Nutlet . . .	plane-convex, round an imaginary axis, 1 kerneled.
Floration . . .	May. (Fruit, 24th June, 1821.)
Place	Messrs. Colvill and Son's, King's Road, Chelsea.
Country . . .	Pennsylvania to Carolina.
Dissection . . .	f. 1. drupoid with persisting calyx, —2. „ transversely sected. —3. „ with part of the epicarp cut away. —4. transverse section of a nutlet, shewing the kernel.

Mr Travis. Del.

Pub. by J. & A. Arch. Cornhill. August 1. 1810.

Wedgwood. Sc.

62.

MESPILUS COCCINEA. (W.)

Scarlet-fruited Hawthorn.

Plant	*spinous.*
Leaves	*deltoid, cordate-ovate, incised-angular, glab. acutely serrate.*
Petiole & Calyx . .	*pubescent, glandular.*
Petals	*orbicular.*
Flowers . . .	*5-gynous.* (Ph.)
Tree	18-20 F.
Stem	5 F.
— Bark . . .	crackt.
— Branches . .	pale brown, glab. divaricated, pendant.
Petiole	very long, sub=leaf, few-haired, sulcate and glandular above.
Leaves	alternate, cordate-orbicular, incised-serrate.
— Section . . .	shallow, $\frac{1}{5}$.
—— Sinus . .	acute-angular.
— Lobes . . .	obtuse-angular.
—— Margin . .	serrate.
——— Serratures	acuminate.
———— Sinus .	obtuse and obtuse-angular.
———— Sides .	(exterior) bowform, (interior) subincurved.
———— Vertices	indurated.
— Base . . .	truncate-ovate or subcordate.
— Apex . . .	obtuse-angular.
— Surface . . .	subscabrous.
— Subface . .	with solitary, short hairs.
— Axis & —— Branches	prominent, horizontally pubescent.
Inflorescence . .	corymbose.
Pedicels . . .	green, pubescent.
Calyx	pubescent, 5-fid.
— Segments . .	horizontal, lanceolate, acuminate, gland-serrate.
—— Sinus . .	obtuse.
Corol	5-petaled.
— Petals . . .	suborbicular, inequally crenate.
—— Claw . . .	short.
Stamens . . .	shorter than coral, inserted in the margin of a disk-like membrane with glossy, puckered lobes, covering orifice of calyx.
— Filaments . .	glab. awled.
— Anthers . .	medifixt, ovate, glab.

—— Lobes . .	whole length adnate.
Pistil.	
— Ovaries . . .	hid in the calyx.
— Styles . . .	3, filiform, glab.
— Stigma . . .	small, simple, fungous.
Drupoid . . .	globular, strewed with little, red-inside, shields, crowned by calyx and closed by disk.
— Nutlets . . .	5, verticillate round an imaginary axis, transverse section obovate, 1-celled, 1-seeded, some abortive.
Floration . . .	May. (Fruit, 20th Aug. 1821.)
Place	Mrs. Simpson, Walham Green.
Country . . .	Canada to Carolina.
Dissection . .	f. 1. transverse section of drupoid, shewing the site of the 5 nutlets. —2. nutlet. —3. „ , longitudinally sected. —4. „ , transversely „ .

J Hart Del.

Pub. by J. & A. Arch. Cornhill August 1 1823.

Wild Sc.

MESPILUS CORDATA. (W.)

Maple-leaved Mespilus.

Plant	*spinous.*
Leaves	*cordate-ovate, incised-angulate, glab.*
Petiole & } *Calyx* } . .	*without glands.*
Flowers	*5-gynous.* (Ph.)
Tree	20 F.
— Branches . .	spreading, divaricated, glab. lead-brown.
Petiole	= $\frac{1}{3}$ length of leaf, glab.
Leaves	alternate, subcordate-deltoid, incised-dentate.
— Section . . .	rather shallow.
— Lobes . . .	short-acuminate.
—— Dents . .	obtuse and acute-angular.
——— Sinus . .	„ angular.
——— Sides . .	excurved.
——— Vertices .	acute, indurated.
— Base . . .	subcordate.
— Apex . . .	shortly acuminate.
— Surface . . .	dark, shining green.
— Subface . .	(parenchyma) glab. covered with pale atoms.
— Axis	prominent, glab.
—— Branches .	glab. (2 lower) prominent.
Corymb	many-flowered.
Peduncles . . .	glab. warty.
— Pedicels . .	„ „ , = fruit.
Calyx	glab. dentate.
— Dents . . .	acute-angular.
—— Margin . .	intire.
—— Sinus . .	obtuse-angular.
Corol	5-petaled.
— Petals . . .	obtuse, inequally crenulate.
Stamens . . .	numerous, rather shorter than petals, inserted on a membrane lining mouth of calyx.
— Filaments . .	tapering, glab.
— Anthers . .	white, basifixt, oblong.
—— Lobes . .	grooved.
Pistil	shorter than stamens.
— Ovary . . .	hid in the calyx.
— Styles . . .	5, pubescent at base, a little thicker upwards.
— Stigmas . .	simple, spongy, rather projecting.
Drupoid . . .	small, glab. crowned by the calyx.

— Epicarp . .	open at top.
— Nutlets . . .	5, verticillate and approximated by their flat sides, 3 fertile and 2 abortive.
Floration . . .	8th June. (Fruit, 3d Sept. 1821.)
Place	Arboretum, Kew.
Country . . .	Canada to Virginia.
Dissection . . .	f. 1. drupoid, with part of the epicarp cut away to shew the 5 nutlets. — 2, 3. transverse sections of drupoid, with 5 cells, 2 of which are abortive. —4. nutlet. —5. „ , transversely sected. —6. kernel.

E.D. Smith, Del.

Pub. by J.R.A. Arch. Cornhill. August. 1.1820.

Weddell Sc.

64.

MESPILUS NIGRA. (W. & K.)

Black-fruited Mespilus.

Plant	*spinous or naked.*
Flowers	*5-gynous.*
Calyx	*villous.*
— *Segments* . .	*subdentate.*
Leaves	*lobate-sinuate, serrate.*
— *Base* . . .	*truncate-subcuneate.*
— *Subface* . .	*villous-hoary.* (W. E.)
Shrub	7-8 F. upright.
— Branches . .	brown, glab. warty.
Petiole	= $\frac{1}{4}$ length of leaf, pubescent.
Leaves	alternate, oblong, incised-serrate.
— Section . . .	$\frac{1}{3}$ or $\frac{1}{2}$, split-like.
—— Sides . . .	straight.
— Lobes . . .	acute.
—— Margin . .	inequally dentate.
——— Dents . .	obtuse-angular.
——— Sinus . .	acute.
——— Sides . .	both excurved.
——— Vertices .	sharp, callous.
— Base . . .	cuneate.
— Apex . . .	obtuse-angular.
— Surface . .	glab.
— Subface . .	pubescent.
— Axis & —— Branches	prominent, pubescent.
Corymb . . .	pauciflorous, (3-4-flowered).
Peduncles & — Pedicels .	densely tomentose.
Bracteas . . .	several on the pedicels, narrow, linear, pointed.
Calyx	short, tomentose.
— Segments . .	7! rolled back, subserrulate at end.
—— Sinus . . .	obtuse.
Corol	5-petaled.
— Petals . . .	rotund, intire, glab.
—— Claw . . .	short.
Stamens . . .	numerous, in =, inserted just below the sinuses of calyx on the edge of a membrane covering its orifice.

— Filaments . .	long, subulate.
— Anthers . .	2-lobed, adnate in the middle.
—— Lobes . .	oblong.
Pistil.	
— Ovaries . . .	hid in the calyx.
— Styles . . .	5.
— Stigmas . . .	flat, projecting over the style.
Drupoid . . .	orbicular, glab. 5-nutleted.
— Nutlets . . .	round an imaginary axis.
Floration . . .	May. (Fruit, 6th July, 1821.)
Place	Messrs. C. Loddiges and Sons', Hackney.
Country . . .	Hungary.
Dissection . . .	f. 1. stipule. —2. drupoid, with part of the epicarp cut away to shew the nutlets. —3. a nutlet.

Leaves	
Calyx (Sepals)	
Flowers	
Fruit	
Buds	
Bracteoles	
Pedicels	
Leaves	
Petals	
Stamens	
Ovary	
Style	
Stigma	
Peduncles	
Flowers	solitary, axillary and
Pedicels	short, bracteolate
Bracteoles	2-3, opposite, ovate,
	acute, pubescent
Calyx	pubescent, 5-lobed,
Tube	rather long,
Segments	long, lanceolate, pubescent,
Margin	4-lacinate,
Dorsa	tipt with red gland,
Corol	5-petaled,

1. 2. 3.

E.D.Smith. Del.

Pubby J.R.A. Arch. Cornhill. Sept. 1 1823.

Wedgwood. Sc.

65.

MESPILUS PARVIFOLIA. (W.)

Gooseberry-leaved Mespilus.

Plant	*spinous.*
Leaves	*cuneate-ovate, incised, serrate, subtomentose.*
Calyx (Sepals) .	*lanceolate, incised, = fruit.*
Flowers	*solitary, 5-gynous.*
Fruit	*subturbinate, punctate-verrucose.* (Ph.)
Shrub	small, upright, 4-5 F.
— Branches . .	dark-brown, glab. covered with very minute elevated points.
Petiole	very short, red, pubescent.
Leaves	alternate, ovate-cuneate, incised, crenate-dentate.
— Section . . .	shallow.
—— Sinus . .	acute.
——— Sides . .	short.
— Lobes . . .	„ , crenate-dentate.
—— Dents . .	obtuse.
——— Sinus . .	acute
———— Sides . .	excurved.
——— Vertices .	short, fleshy.
— Base . . .	cuneate.
— Apex . . .	obtuse-angular.
— Surface . .	shining, dark-green, strewed with short, white hairs.
— Subface . .	paler, dull-green, reticulated-veined.
— Axis . . .	elevated.
—— Branches .	fainter, all strongly pubescent.
Stipules . . .	2, minute, 1-sided, on the shoots at base of each leaf, inequally lanceolate, gland-tipt-dentate on one side.
Flowers . . .	solitary, axillary and terminal.
Pedicels . . .	short, horizontally pubescent.
Bracteas . . .	2-5, opposite each pedicel, petiolate, lanceolate, acute, inequally denticulate, gland-tipt.
Calyx	pubescent, 5-7-fid.
— Tube . . .	rather long.
— Segments . .	long, lanceolate, pubescent.
—— Margin . .	2-dentate.
——— Dents . .	tipt with red glands.
Corol	5-petaled.

— Petals . . .	undulate, crenate, subspatulate, = segments of calyx.
Stamens . . .	numerous, much shorter than petals, inserted on the edge of a cup-form disk lining mouth of calyx.
— Filaments . .	white, tapering, glab. and flat inside.
— Anthers . .	oblong, medifixt.
—— Lobes . .	„ , grooved.
Pistils	= stamens.
— Ovaries . . .	hid in calyx.
— Styles . . .	6, filiform, glab.
— Stigmas . .	simple, fungous, scarcely projecting.
Drupoid . . .	elliptic, tomentose, 8-nutleted, 6 abortive and 2 fertile.
Floration . . .	May. (Fruit, 12th June, 1821.)
Place	Mr. James Lee's, Hammersmith.
Country . . .	New Jersey to Carolina.
Dissection . . .	f. 1. drupoid with persisting calyx. —2. „ transversely sected, shewing the 8 nutlets, 2 of which only are fertile. —3. nutlet.

Leaves	ovate-lanceolate
— Sheath	tubular
— Ligule	short
— Petiole	4 inches
Inflorescence	a dense spike
Rachis	3 inches
— Scape	2 feet
Bracts	ovate-lanceolate, acuminate, concave, membranous, pale green, 1 inch
Peduncle	1 inch
Leaves	3
— Margin	hyaline
— Serrulate	obscurely
— Nerves	many
— Sides	unequal
— Veins	parallel
— Base	cuneate
— Apex	acuminate
— Surface	glabrous
— Sub-face	glabrous
— Axil	glabrous
— Petioles	glabrous
— Veins	parallel
Flowers	
Axil	glabrous
Pedicels	glabrous
Calices	
— Ovaries	3, elliptic, glabrous, 3-loculed, many-ovuled, imbricate
— Styles	
— Stigmas	
Floccules	36th July, 1891.
Plate	Mr. Julius Cain, Hammersmith.
Country	Canada to Carolina.

E.D.Smith.Del. Pub.by J.& A.Arch.Cornhill.Sept.1.1823. Weddell.Sc.

66.

SPIRÆA CARPINIFOLIA. (W. E.)

Hornbeam-leaved Spirea.

Leaves	*ovate-elliptic, largely serrate.*
— Apices . . .	*acute.*
— Faces . . .	*glab.*
Racemes . . .	*divaricate-paniculate.* (W. E.)
Shrub	erect.
Stem	reddish-brown, glab. with 10 elevated, parallel fillets and broad, flat intervals.
Petiole	short, sericeous.
Leaves	alternate, obovate.
— Margin . . .	inequally serrate.
—— Serratures .	obtuse-angular.
——— Sinus .	acute.
——— Sides .	excurved.
——— Vertices .	callous, blunt.
— Base . . .	tapering, intire.
— Apex . . .	obtuse-angular.
— Surface . . .	glab.
— Subface . .	„ , subglaucous.
— Axis, —— Branches & —— Veins	„ , prominent.
Raceme . . .	superdecompound, terminal.
Axis & Peduncles . .	set with horizontal hairs.
Pedicels . . .	lirate-sulcate, pubescent.
Calyx	subglab. 5-fid. lirate-sulcate.
— Segments . .	obtuse-angular.
—— Sinus . .	obtuse.
—— Margins . .	excurved, intire.
Corol	5-petaled.
— Petals . . .	orbicular, intire.
Stamens . . .	numerous, longer than corol, inserted under the edge of the disk.
— Filaments . .	long, slender, filiform.
— Anthers . .	glab. medifixt.
—— Lobes . .	adnate.
Disk	membranous, = tube of calyx.
— Margin . . .	fleshy, undulate-puckered.
Pistils	shorter than stamens.
— Ovaries . . .	6, elliptic, glab. free.
— Styles . . .	long, filiform.
— Stigmas . .	simple, subclavate.
Floration . . .	24th July, 1821.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Canada to Carolina.

SPIRÆA BETULÆFOLIA (Pall.)

Exogenous shrub.

Leaves	Le
— Margin . . .	
— Base . . .	
— Apex . . .	
— Surface . . .	
— Stipules . . .	
— Nervation . . .	
Petiole . . .	
Leaves . . .	
— Margin . . .	
—— Disposition . . .	
—— Sinus . . .	serie-
—— Sides . . .	(exterior) bowfor
—— Vertices . . .	callous.
— Base . . .	
— Apex . . .	
— Surface . . .	
— Stipules . . .	
— Nervation . . .	
Corymb . . .	flower, compound
Peduncles & Pedicels	
Calyx . . .	
— Description . . .	
—— Tube . . .	
Corol . . .	
— Petals . . .	
Stamens . . .	numerous, longer than petals, inserted at the sinuses of the calyx, with short, gland-like rectaries at their bases.
— Filaments . . .	glab. slender.
— Anthers . . .	,, pink, medium.
—— Lobes . . .	adnate.
Pistils . . .	5, ½ length of stamens.
— Ovaries . . .	glab. ovate, free.
— Styles . . .	twice as long as ovaries.
— Stigmas . . .	clubbed.
Flowering . . .	15th July, 1881.
Place	Mr. Knight's, King's Road, Chelsea.
Country	Mountains of Virginia.

E.D.Smith Del.

Pub. by J. & A. Arch. Cornhill. Sept. 1. 1833.

Weddell Sc.

67.

SPIRÆA BETULÆFOLIA. (Pal.)

Birch-leaved Spirea.

Leaves	*broad-ovate.*
— *Margin* . . .	*incised-serrate.*
— *Subface* . .	*glab.*
Corymb	*terminal, compound, fastigiate, foliose.* (Ph.)
Shrub	low, erect.
— Branches . .	glab, purple-brown, cylindric, with slight elevations.
Petiole	very short, glab.
Leaves	alternate, ovate-elliptic.
— Margin . . .	2-dentate.
—— Dents . .	obtuse-angular.
——— Sinus . .	acute- „ .
——— Sides . .	(exterior) bowform, (interior) incurved.
———— Vertices .	callous.
— Base . . .	round.
— Apex . . .	obtuse.
— Surface . . .	glab. bullate.
— Subface . .	„ .
— Nervation . .	„ , prominent.
Corymb . . .	dense, compound, terminal.
Peduncles & — Pedicels .	green, glab.
Calyx	glab. 5-dentate.
— Dents . . .	short, obtuse.
—— Margins . .	obtuse.
—— Sinus . .	„ .
Corol	5-petaled.
— Petals . . .	orbicular, glab. intire.
Stamens . . .	numerous, much longer than corols, inserted at the sinuses of the calyx, with short, gland-like nectaries at their bases.
— Filaments . .	glab. slender.
— Anthers . .	„ , pink, medifixt.
—— Lobes . .	adnate.
Pistils	5, $\frac{1}{3}$ length of stamens.
— Ovaries . .	glab. ovate, free.
— Styles . . .	twice as long as ovaries.
— Stigmas . .	clubbed.
Floration . . .	13th July, 1821.
Place	Mr. Knight's, King's Road, Chelsea.
Country . . .	Mountains of Virginia.

67.

SPIRÆA BETULÆFOLIA. (Pall.)

Birch-leaved Spiræa.

Leaves . . .	broad-ovate.
— Margin . . .	irregularly serrate.
— Stalkless . . .	sessile.
Corymb . . .	terminal, compound, flattish. Rachis. (Ibr.)
Shrub . . .	low, erect.
—Branches . . .	dark purple-brown, cylindric, slightly elevated.
Petiole . . .	very short, glab.
Leaves . . .	alternate, ovate-elliptic.
— Margin . . .	2-dentate.
—— Dents . . .	obtuse-angular.
—— Sinus . . .	acute.
—— Sides . . .	(exterior) bowform (the four inner) rectilineal.
—— Vertices .	callous.
— Base . . .	truncated.
— Apex . . .	obtuse.
— Surface . . .	glab, bedotted.
— Subface . . .	glab, pale.
— Nervation . . .	pronascent.
Corymb . . .	dense, corymbed, terminal.
Peduncles & } . . .	glab.
— Pedicels }	
Calyx . . .	glab. Segments
— Deep . . .	short, obtuse.
—— Margin . . .	ciliated.
—— Sinus . . .	
Corol . . .	5-petalled.
— Petals . . .	orbicular, plane, obtuse.
Stamens . . .	numerous, much longer than corola, inserted at the sinuses of the calyx, with short, gland-like rectaries at their bases.
— Filaments . .	glab, slender.
— Anthers . . .	pink, medial.
—— Lobes . . .	adnate.
Pistils . . .	5, ½ length of stamens.
— Ovaries . . .	glab, ovate, free.
— Styles . . .	twice as long as ovaries.
— Stigmas . . .	clubbed.
Floration . . .	13th July, 1821.
Place	Mr. Knight's, King's Road, Chelsea.
Country . . .	Mountains of Virginia.

98.

SPIRÆA TAILORA (W.)

Thyrsiform Spiræa.

Locality	
Habit	
Stem	
Petiole	
Leaves	
— Serratures	
— Sinuses	
— Sides	
— Lobes	
— Point	
— Nerves	
Umbels	
— Rays	
Calyx	
— Segments	
Corol	
— Petals	
Stamens	
— Filaments	
— Anthers	
Pistils	
— Ovaries	
— Styles	
— Stigmas	
Flowering	30th May, 1881.
Place	Mr. James Lee's, Hammersmith.
Country	Siberia and the Altaic Mountains.

E.D. Smith. Del. Pub.d by J. & A. Arch. Cornhill. Sept. 1.1823. Wellcott Jr.

68.

SPIRÆA TRILOBA. (W.)

Three-lobed Spirea.

Leaves	*subrotund, subcordate, obtusely lobate-dentate.*
Umbels	*pedunculate.* (W.)
Shrub	very low.
Stem	brown, glab.
Petiole	short, glab.
Leaves	alternate, incised-lobate at apex.
— Section . . .	from the apex, shallow.
—— Sinus . .	acute.
—— Sides . . .	excurved.
— Lobes . . .	dentate.
—— Dents . .	acute.
——— Sinus . .	,,
——— Sides . .	excurved.
———— Vertices .	naked.
— Base . . .	truncate-ovate, intire.
— Apex . . .	obtuse.
— Faces . . .	glab.
— Nerves . . .	prominent.
Umbels . . .	simple, terminal, subcorymbose.
— Rays . . .	glab.
Calyx	glab. 4-fid.
— Segments . .	subacuminate, mucronate.
Corol	4-petaled.
— Petals . . .	orbicular, intire, longer than stamens, inserted at the sinuses of calyx.
Stamens . . .	16, inserted on the calyx at the depth of the segments.
— Filaments . .	longer than the calyx.
— Anthers . .	orbicular.
Pistils	shorter than stamens.
— Ovaries . .	glab. oblong, free.
— Styles . . .	rather longer than the ovaries, curved.
— Stigmas . .	scarcely apparent.
Floration . . .	30th May, 1821.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Siberia and the Altaic Mountains.

68.

SPIRÆA TRILOBA. (W.)

Three-lobed Spiræa.

Leaves . . .	rhomboidal, sub-cuneate, obtusely lobed-dentate.
Stalk . . .	petiolate. (W.)
Shrub . . .	very low.
Stem . . .	brown, glabrous.
Petals . . .	white, oblong.
Leaves . . .	alternate, incised-lobate at apex.
— Section . . .	from the apex, shallow.
— Sinus . . .	obtuse.
— Sides . . .	excurved.
— Lobes . . .	dentate.
— Nerves . . .	acute.
— Base . . .	cuneate.
— Sides . . .	excurved.
— Veins . . .	naked.
— Base . . .	truncate-ovate, ciliate.
— Apex . . .	obtuse.
— Face . . .	glabrous.
— Nerves . . .	prominent.
Umbels . . .	simple, terminal, subcorymbose.
— Rays . . .	glabrous.
Calyx . . .	glabrous, 4-fid.
— Segments . . .	subacuminate, spreading.
Corol . . .	4-petaled.
— Petals . . .	orbicular, ciliate, longer than stamens, inserted at the mouth of calyx.
Stamens . . .	16, inserted on the calyx at the depth of the segments.
— Filaments . . .	longer than the calyx.
— Anthers . . .	orbicular.
Pistils . . .	shorter than stamens.
— Ovaries . . .	glabrous, oblong, free.
— Style . . .	rather longer than the ovaries, curved.
— Stigma . . .	scarcely apparent.
Capsules . . .	30th May, 1831.
Time . . .	Mr. Jamie Log's, Hammersmith.
Locality . . .	Siberia and the Altaic Mountains.

RUBUS LACINIATUS (N.O. ROSACEÆ)

Imperfect Evergreen Shrub

Leaves — Leaflets — Petiole, Petiolules — Prickles	pedate, 5-foliolate, digitate. dentate. recurved.
Shrub — Branches — Prickles	Stem erect, angular, furrowed, glabrous. slender, recurved.
Pubis	(general) fulvous.
Leaves — Leaflets — Stalks	ternate, pedate. irregularly serrate. petiolate.
Stipules — Rounded — Veins	adnate to petiole.
Inflorescence — Peduncles & — Pedicels	panicled. recurvedly aculeate, set with horizontal pubes.
Bracteas	pubescent, long, linear, acute.
Calyx — Segments	reflected, 5-parted, erect-ovate, curved-aristed. 3-dentate, 2 lateral long, acute, mid-one twice long, lanceolate.
Corol — Petals — Apex	5-petaloid. cuneate. 3-dentate.

J.Hart.Del.

Pub.by J. & A. Arch. Cornhill. Sep.1.1823.

Weddell Jr.

RUBUS LACINIATUS. (W. Hort. Berl.)

Jagged-leaved Bramble.

Leaves	*quinate-digitate and ternate.*
— Leaflets . .	*pinnate.*
Stem, Petiole, & Peduncle . .	*aculeate.*
Prickles . . .	*recurved.* (W. E.)
Shrub	spreading and straggling.
— Branches . .	recurved, aculeate, lirate, set with horizontal hairs.
—— Prickles . .	short, recurved, red, shining.
Petiole	(common) pubescent, aculeate.
„	(foliolar) in=, pubescent.
Leaves	alternate, subbipinnate.
— Leaflets . .	irregular, sinuate-serrate.
—— Section . .	$\frac{1}{2}$.
——— Sinus . .	acute-angular.
——— Sides . .	subrectilinear.
— Lobes . . .	acuminate.
—— Margin . .	inequally serrate.
——— Serratures	acuminate.
——— Sinus .	acute.
——— Sides .	various.
——— Vertices	long, brown indurations.
— Base . . .	subcordate.
— Apex . . .	acuminate.
— Surface . . .	glab.
— Subface . .	pubescent.
— Axis & —— Branches	„ , prominent.
—— Veins . .	„ .
Inflorescence . .	paniculate.
Peduncles & — Pedicels .	recurvedly aculeate, set with horizontal pubescence.
Bracteas . . .	pubescent, long, linear, acute.
Calyx	reflected, 5-parted, sericeous, curved-spined.
— Segments . .	3-dentate, 2 laterals long, acute, mid-one twice as long, lanceolate.
Corol	5-petaled.
— Petals . . .	cuneate.
—— Apex. . .	3-dentate.

—— Dents . .	acuminate, distant.
Stamens . . .	numerous, shorter than corol, in 5 pleurodiscal phalanges.
— Filaments . .	slender, subulate.
— Anthers . .	elliptic, apicifixt.
Disk	lining the calyx.
— Margin . . .	obtuse, set with brown scales.
Pistils	numerous, = stamens.
— Ovaries . . .	„ , on a conic gynophore arising from the disk.
— Styles . . .	thicker upwards.
— Stigmas . .	simple, scarcely apparent.
Floration . . .	28th June, 1821.
Place	Mr. Knight's, King's Road, Chelsea.
Country . . .	?

1.

J. Hart Del.

Pub. by T. & A. Arch. Cornhill. Sept. 1. 1823.

Weddell Sc.

70.

POTENTILLA FLORIBUNDA.

Cluster-flowered Cinquefoil.

Plant	*erect, much branched, very hirsute.*
Stipules . . .	*ovate, intire.*
Leaves	*quinate-pinnate.*
— Leaflets . .	*linear-oblong.*
—— Margin . .	*revolute.*
Petioles . . .	*short.*
Corymb . . .	*terminal, 2-chotomous, densely multiflowered.*
Calyx (Segments)	*sub=.*
Petals	*subrotund, = length of calyx.* (Ph.)
Subshrub . . .	low, $1\frac{1}{2}$-2 F.
Stem & — Branches . .	dull purple, covered with long hairs.
Petiole	$= \frac{2}{3}$ length of leaf.
Leaves	digitate-pinnate, alternate.
— Leaflets . .	7, four from the same point at base and 3 united terminal, sessile, linear-lanceolate.
—— Margin . .	intire, subrevolute.
—— Base . . .	acute-angular.
—— Apex. . .	„ , red tipt.
—— Surface . .	subglab.
—— Subface . .	with long, adpresst hairs.
—— Axis, —— Branches, ——— & Veins	long-haired.
Stipules . . .	membranous, scariose, veined, sheathing the stem, ciliate with long hairs.
— Apex . . .	2-dentate.
Flowers	2-3, terminal.
Pedicels . . .	$\frac{3}{4}$-inch, hairy.
Bracteas . . .	0, except the exterior 5 segments of calyx.
Calyx	pubescent, flat, 5-parted, sub=, 2-serial. *(1st Series or outer.)*
— Segments . .	5, leaf-like, pubescent, narrow, pointed, tipt with a red callosity.
—— Subface . .	with prominent axis, branches and veins. *(2nd Series or inner.)*
— Segments . .	pubescent, acuminate and with broad bases.
Corol	5-petaled.
— Petals . . .	glab. = calyx, subrotund, intire.
—— Claw . . .	short.
Stamens . . .	numerous, shorter than corol, inserted in the calyx.

— Filaments . .	attenuated.
— Anthers . .	oblong, brown.
Pistil.	
— Ovaries . . .	hemispheric.
— Styles . . .	numerous, with pappused bases.
— Stigmas . . .	0 apparent.
Floration . . .	9th July, 1821.
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	Canada and on the Mountains of New York and New Jersey.
Dissection . .	f. Calyx as seen from without.

J.Hart. Del.

Pub. by J.R.A. Arch. Cornhill. Sept.r 1.1823.

Waddell Sc.

71.

TILIA ALBA. (W.)

White Lime Tree.

Flowers	*with nectaries.*
Leaves	*cordate.*
— *Base* . . .	*in=.*
— *Subface* . .	*white-tomentose.* (W. E.)
Tree	40-45 F. with a round, regular head.
— Stem . . .	6 F.
—— Diameter .	$1\frac{3}{4}$-2 F.
—— Bark . . .	pale-brown, glab.
—— Branches .	numerous, erect, spreading, (lower) hanging.
——— Branchlets	cylindric, olive-color, sericeous.
Petiole	= adnate portion of peduncle, thicker at both ends, round, sericeous.
Leaves	alternate, deeply and inequally cordate-elliptic, sub-incised-repand-dentate.
— Lobes . . .	short, angular.
—— Margin . .	subequally repand-dentate.
——— Dents . .	acute-angular.
———— Sinus .	obtuse and obtuse-angular.
———— Sides .	subexcurved.
———— Vertices	longish, transparent.
— Base . . .	deeply cordate, 1 side protruded lower.
— Apex . . .	short-acuminate.
— Surface . .	dark green, glab.
— Subface . .	covered with a close, white felt.
— Nerves . . .	prominent, covered with „ „ .
—— Branches .	(2 laterals on each side) united at base and sparsed with solitary, brown gland-hairs.
Corymb . . .	3-7-flowered, axillary, alternate.
Peduncles . . .	downy, adnate about $\frac{1}{2}$ way on the bracteas.
— Pedicels . .	downy.
Bracteas . . .	linear-lanceolate, rather longer than the corymb, axillary, with obtuse apex.
— Margin . .	intire.
— Faces . . .	covered with a yellowish wool.
Calyx	sericeous, 5-parted, sub = corol.
— Segments . .	concave, lanceolate, obtuse-angular.
—— Sinus . .	acute.
Corol	5-petaled, inserted between the calyx and stamens.
— Petals . . .	elliptic, subconvex.

— Nectaries . .	5, = petals, inserted close under the ovary.
—— Limb . .	lanceolate.
—— Claw . . .	long.
Stamens . . .	numerous, shorter than the nectaries, inserted round the base of ovary.
— Filaments . .	glab. slender.
— Anthers . .	didymous or separated at top, yellow, glab. with a white line indicating the valve.
Pistil	= nectaries.
— Ovary . . .	conic, sericeous.
— Style . . .	thick, oblique, = ovary.
— Stigma . . .	simple, 5-gonous, conic, sericeous, 4-5-ridged.
Floration . . .	11th July, 1822. (Fruit, 17th Sept. 1821.)
Place	Arboretum, Kew.
Country . . .	Hungary and the East.
Dissection . . .	f. 1. calyx and pistil. —2. flower, shewing the 3 series, nectaries, petals and calyx, with the stamens. —3. a stamen. —4. carcerule seen from above. —5. „ , transverse section. —6. „ , longitudinal „ . —7. a seed.
Observation.	This is not *T. alba.* Mich. in which the principal nerves, according to W. (Baumzucht), are brown-tomentose.

I. Hart. Del.

Pub. by. J. & A. Arch. Cornhill. Sep. 1. 1823.

Weddell. Sc.

CLEMATIS RETICULATA. (Walt.)

Netted Virgin's Bower.

Plant	*climbing.*
Leaves	*pinnate, 4-pair.*
— *Leaflets* . .	*ovate, all intire and petiolated, membranous.*
—— *Apices* . .	*obtuse.*
—— *Faces* . .	*reticulate-veiny.*
Flowers	*solitary.*
Petals	*subcoriaceous.*
Awns (of Seed) .	*plumose.* (Ph.)
Subshrub . . .	weak, climbing.
Stem	lirate-sulcate, sericeous.
Petiole	(common) 9 inch, ending in a tendril.
Leaves	opposite, 2-pinnate (decomposite).
— Pinnules . .	3-foliolate.
—— Leaflets . .	ovate, simple or 2-3-lobed.
——— Margin .	intire, very finely ciliate.
——— Base . .	ovate and often in=.
——— Apex . .	acute-angular.
——— Surface .	glab.
——— Subface .	" , shining.
——— Nerves .	5, slightly haired.
———— Branches	reticulated.
Inflorescence . .	1-flowered, axillary, cernuous.
Peduncles . . .	5 inches.
Perigone . . .	subsericeous, campanulate, thick, coriaceous, purple-rose-color, 4-fid.
Segments . . .	5-nerved, 3 prominent and 2 fainter.
— Apex . . .	3-lobed, externally sericeous.
—— Lobes . .	acuminate.
——— Margin .	sericeous.
Stamens . . .	numerous, = $\frac{1}{3}$ segments, inserted round the ovary.
— Filaments . .	flat, pubescent.
— Anthers . .	long, adnate to sides of filaments with a fine seamline.
Pistil.	
— Ovaries . . .	numerous, pubescent, tapering into styles.
— Styles . . .	subulate, plumose.
— Stigmas . .	simple, scarcely apparent.

Floration . . .	24th June, 1822.
Place	Messrs. Colvill and Son's, King's Road, Chelsea.
Country . . .	Georgia and Carolina.
Dissection . . .	f. 1. stamen, shewing the lateral fixation of the anthers. —2. camare. —3. carpel.

J. Hart. Del.

Pub. by J. & A. Arch. Cornhill. Oct.r 1. 1823.

CLEMATIS GLAUCA. (W.)

Glaucous Virgin's Bower.

Leaves	*composite.*
— Leaflets . .	*ovate, sublobate, obtuse, mucronate, glaucous.*
Petals (Margin)	*pubescent.* (W.)
Shrub	weak, climbing.
Stem	green, faintly angular, glab.
Petiole	(common) 2 inch.
Tendrils . . .	opposite, spiral, ending with 3 leaflets.
Leaves	twice ternate, opposite.
— Leaflets . .	intire, or 2-3-fid, inequally lanceolate.
—— Margin . .	intire.
—— Base . . .	in =, ovate.
—— Apex . .	obtuse and subacute, mucronate.
—— Faces . .	glaucous.
—— Surface . .	closely speckled with glaucous atoms.
—— Subface . .	with long, solitary, white hairs.
—— Axis . . .	prominent.
——— Branches	fainter, irregular.
Inflorescence . .	flowers solitary, axillary.
Peduncles . . .	$1\frac{1}{2}$ inch, with solitary, very short hairs.
Perigone . . .	expanding, 4-sepaled.
— Sepals . . .	yellow, lanceolate, subglab, covered with shining, golden particles.
—— Margin . .	white, tomentose.
Stamens . . .	numerous, inserted round the ovaries.
— Filaments . .	elliptic! flat, with cottony margins.
— Anthers . .	2, oblong-linear, adnate to edge of filament!
Pistils	shorter than sepals.
— Ovaries . . .	numerous, round, fixed in the alveoles of the elliptic receptacle and covered with long, shining, white hairs.
— Styles . . .	continuations of the ovaries, setaceous, silky.
— Stigmas . . .	long, yellowish underneath, subdilated, short-haired.
Floration . . .	18th July, 1822.
Place	Mr. Knight's, King's Road, Chelsea.
Country . . .	Siberia. Orient.
Dissection . . .	f. 1. stamen to shew the lateral fixation of anthers. —2. camare. —3. carpel.

73.

CLEMATIS GLAUCA. (W.)

Glaucous Virgin's Bower.

Stem . . .	
Petiole . . .	(common) slight.
Tendrils . . .	opposite, spiral, slight, with 3 leaflets.
Leaves . . .	twice ternate, opposite,
— Leaflets . . .	entire, or 2-3-fid, ingrately lanceolate.
— Margin . . .	entire.
— Base . . .	in = ovate.
— Apex . . .	obtuse and subapicle, mucronate.
— Face . . .	glaucous.
— Nerves . . .	closely appressed with glaucous stouts.
— Surface . . .	with long, soliter, white hairs.
— Axils . . .	pencilled.
— Branches . . .	rather, irregular.
Inflorescence . . .	flowers solitary, axillary.
Peduncles . . .	1½ inch, with solitary, very short hairs.
Perigone . . .	expanding, 4-sepaled.
— Sepals . . .	yellow, lanceolate, subglab, covered with shining,
	golden particles.
— Stamens . . .	entire, lanuginose.
— Filaments . . .	elliptic flat, with coloured margins.
— Anthers . . .	⅔ oblong-linear, adnate (cleaving at filament).
Pistils . . .	shorter than sepals.
— Ovaries . . .	pubescent, 1-celled, fixed in the middle of the elip-
	tic receptacle and covered with long, shining,
	white hairs.
— Styles . . .	continuations of the ovaries, elongate, subglab.
	hairy, yellowish underneath, subplumed.
Fruit . . .	(Jan. July, 1852).
Stamens . . .	Sidcup, Kent's Road, Chelsea.
Capsules . . .	⅓ 1. oblong to ovoid, the lateral flattened.
	—2. coiaceous.
	—1. carpel.

Sidcup, Orient.

74.

CLEMATIS VIRGINIANA. (?)

Virginian Virgin's Bower.

Leaves	ovate,
— Leaflets	ovate, subcordate
Corymb	
Petals	
Flowers	
Shrub	climbing
Stem	purple,
—	knee
—	rish,
Leaves	
— Leaflets	
— Stalklets	
— Lobes	
—	
—	
—	
— Margin	dentate,
— Base	
— Sides	both
— Base	subcordate
— Apex	obtuse
— Face	glab
—	glaucous, glab
—	
Inflorescence	
Bracteas	
Perigone	
— Sepals	
Stamens	
— Filaments	
— Anthers	
Flowering	
Place	Mr. Jun
Country	Canada to Florida.

E.D. Smith. Del.

Pub. by J. & A. Arch, Cornhill, Oct 1. 1823

Weddell Sc.

CLEMATIS VIRGINIANA. ♂. (W.)

Virginian Virgin's Bower.

Plant	*climbing.*
Leaves	*3-nate.*
— Leaflets . .	*ovate, subcordate, incised-dentate and lobate.*
Corymb . . .	*2-chotomous, few-flowered.*
Petals	*longer than stamens.*
Flowers	*dioicous.* (Ph.)
Shrub	climbing, slender.
Stem	purple, glab. obtusely lirate, interstices with narrow lines.
— Branches . .	red, lirate.
Leaves	opposite, 3-nate (pinnate, 3-foliate), tendril'd.
— Leaflets . . .	3-lobate-dentate.
—— Section . .	shallow.
—— Lobes . .	obtuse-angular.
——— Sinus . .	acute.
——— Sides . .	excurved.
——— Margin .	dentate.
——— Dents .	obtuse-angular.
——— Sinus	acute.
——— Sides	both excurved.
—— Base . . .	subcordate-ovate, intire (no dents).
—— Apex . .	obtuse-angular.
—— Faces . .	glab.
—— Nerves . .	(3 principal) glab.
——— Branches	irregular, „ .
Inflorescence . .	a compound, axillary raceme.
Bracteas . . .	at base of pedicels, linear, lanceolate, acute.
Perigone . . .	4-sepaled, sericeous.
— Sepals . . .	linear, oblong, intire, acute-angular.
Stamens . . .	numerous, inserted in the centre of the perigone
— Filaments . .	flat, tapering, running through the anthers and dividing them.
— Anthers . .	2, oblong, adnate to sides of upper part of filaments (not grooved.)
Floration . . .	10th Aug. 1821.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Canada to Florida.

CLEMATIS VIRGINIANA. 5. (V.)

Virginian Virgin's Bower.

Leaves . .	opposite, 3-foliate (ternate), 5-foliate (quinate).
Leaflets . .	ovate-acuminate.
Corymb . .	axillary and terminal.
Petals . .	none.
Fleece . .	abundant.
Shrub . .	climbing, slender.
Stem . .	purple, pale ridges, pubescent, interlaced with narrow lines.
— Branches . .	red, brittle.
Leaves . .	opposite, 3-foliate (ternate), 5-foliate (quinate).
Leaflets . .	ovate-acuminate.
— Stem . .	angular.
— Lobes . .	ovate-angular.
— Sides . .	serrated.
— Margin . .	dentate.
— Dentures . .	obtuse-angular.
— Sinus . .	acute.
— Sides . .	both excurved.
— Base . .	subcordate-ovate, bilobed (no dens).
— Apex . .	obtuse-angular.
— Face . .	glab.
— Upper . .	(& principal) glab.
— Branches . .	[illegible]
Inflorescence . .	compound, axillary racemes.
Bracteas . . .	at base of pedicels, linear, lanceolate, acute.
Perigone . . .	4-cupped, reflexed.
— Sepals . . .	linear, obtuse, white, 4-nerved.
Stamens . . .	numerous, inserted in the centre of the perigon
— Filaments . .	flat, pubescent, reaching through the anthers and
— Anthers . . .	[illegible]
	[illegible]
Pistils . . .	[illegible]
Fruit . . .	Mr. James Lloyd, Hancock.
Climate . . .	Canada to Florida.

J. Hart. Del.

Pub. by J. & A. Arch. Cornhill. Oct. 1 1823.

Wed. Hill. sc.

GLEDITSCHIA HORRIDA. ♂. (W.)

Strong Spined Gleditschia.

Legume	*polispermous, flat.*
Spines	*robust, branched, those on the stem fasciculate.* (W. B.)
Tree	20-25 F.
Stem	knotty, 5 F. set with spines in bundles.
— Diameter . .	1 F.
— Bark . . .	smooth.
— Branches . .	horizontal, (lower) pendant.
Spines	of the stem brown, long, twice branched, glab. very strong.
— Axis . . .	3-inch.
—— Branches .	2-3 inch, rebranched with very acute thorns.
Petiole	(common), 5-inch, glab. or with a few solitary hairs.
„	(foliolar), short, glab. or few-haired.
Leaves	in alternate bundles of 2-4, abruptly pinnate.
— Leaflets . .	about 8 pair, in =, elliptic.
—— Margin . .	obsoletely adpresst-serrate.
—— Serratures	tipt with minute, brown indurations.
—— Base . . .	ovate.
—— Apex. . .	obtuse, mucronate.
—— Surface . .	glab.
—— Subface . .	„ , speckled with minute, glaucous spots.
—— Axis . . .	elevated, glab.
—— Branches	0.
Spike	2 inch, foliaceous.
— Flowers . .	about 30, sessile, ♂.
Peduncles . . .	pubescent.
— Pedicels . .	0.
Perigone . . .	short, tubular, 10-fid, covered with fleshy hairs.
— Segments . .	5 outer and 5 inner, linear, long, obtuse.
Corol	0, (unless inner segments of perigone).
Stamens . . .	10, longer than perigone, 5 inserted at middle of tube of inner segments and 5 in the sinuses.
— Filaments . .	subulate, pubescent at base, glab. above.
— Anthers . .	medifixt, subcordate.
—— Lobes . .	slightly sulcate.
Floration . . .	31st July, 1821. (In 1822, 28th June!)
Place	T. Canham's, Esq., Twickenham.
Country . . .	China.

GENISTA CINEREA. (W. ex Spreng.)

Ash-coloured Genista.

E.D. Smith. Del.

Pub.by J. & A. Arch. Cornhill. Oct.r 2.1823

Waddell. Sc.

76.

GENISTA CINEREA. (W. sub Spart.)

Ash-colored Genista.

Branches . . .	*cylindric*, 10-*sulcate*.
Leaves	*lanceolate, sessile, sericeous.*
Flowers . . .	*axillary, solitary, pubescent.* (W.)
Shrub	8 F. diffuse.
Stem	subglab. cylindric, 10-lirate-sulcate !
— Liras . . .	finely sulcate.
— Branches . .	green, furrowed, sericeous.
Petiole	sub 0.
Leaves	subsessile, alternate, lanceolate.
— Margin . . .	intire.
— Base . . .	attenuate.
— Apex . . .	acute !
— Surface . . .	with a few, white hairs.
— Subface . .	covered with long, adpresst, white, silky hairs.
— Axis . . .	scarcely apparent.
Spike	terminal, many-flowered.
— Pedicels . .	very short, sericeous.
Bracteas . . .	1 at foot of each pedicel and 2 at base of calyx, sericeous, narrow, pointed.
Calyx	sericeous, 2-fid. { 2 long, acute teeth. / 3 narrow, close, = teeth. }
Corol	glab.
— Standard . .	reflected.
— Wings . . .	= keel.
— Keel . . .	sericeous ! !
Stamens . . .	1-delphous, =.
— Filaments . .	short.
— Anthers . .	oblong.
Pistil.	
— Style . . .	rather longer than stamens.
— Stigma . .	small.
Legume . . .	irregular, 4-seeded, sericeous.
Floration . . .	6th June, 1821.
Place	Messrs. Malcolm and Co's. Kensington.
Country . . .	Dauphiny. Nice.
Dissection . . .	f. 1. calyx. —2. standard. —3. wings. —4. keel opened. —5. stamens connected in a tube. —6. pistil. —7. legume. —8. section of stem.

GENISTA CINEREA. (*W. and Spart.*)

Hab.-cultivated Gardens.

Branches	cylindric, 10-angled.
Leaves	deciduous, scaly, petioled.
Flowers	distinct, papilionaceous. (*W.*)
Stamens	8 *F.* diadelph.
Pods	subglab. cylindric, 10-lirate-sulcate!
— Lirae	finely sulcate.
— Branches	green, furrowed, setaceous.
Petals	sub 0.
Leaves	subsessile, alternate, lanceolate.
— Margin	entire.
— Base	attenuate.
— Apex	acute.
— Surface	with a few white hairs.
— Stalkless	covered with long, adpress, white, silky hairs.
Spike	terminal, many-flowered.
— Pedicels	very short, setaceous.
Bracteas	1 at foot of each pedicel and 2 at base of calyx, setaceous, narrow, pointed.
Calyx	deciduous, 2-lip. { 2 long, acute teeth. / 3 narrow, close, = keel. }
Corol	glab.
— Standard	reflected.
— Wings	= keel.
— Keel	acute.
Stamens	5-delphous.
— Filaments	glabr.
— Anthers	oblong.
Pistil	
— Style	rather longer than stamens.
— Stigma	small.
Legume	irregular, depressed, sericeous.
Flowering	6th June, 1821.
Place	Messrs. Nelson and Co's, Kensington.
Country	Dauphiny, Nice.
Description	1. L. calyx.
— Filaments	2. wings.
— Anthers	3. keel petaled.
— Style	4. stamens connected in a tube.
— Stigma	5. pistil.
Legume	6. legume.
Flowering	7. section of stem.

E. D. Smith. Del.

Pub by J. & A. Arch. Cornhill. Oct. 1. 1823.

Weddell Sc.

77.

GENISTA OVATA. (W. & K.)

Oval-leaved Genista.

Branches . . .	*cylindric, striate.*
Leaves	*short, oblong-ovate, hirsute.*
Legume	*hirsute.* (P.)
Subshrub . . .	low, upright.
— Stem & —— Branches	horizontally pilose, lirate-sulcate, with a narrow lira in the interstice.
Leaves	alternate, sessile, lanceolate.
— Margin . . .	intire, ciliate.
— Base . . .	taper, sitting on the stem.
— Apex . . .	acute-angular.
— Surface . .	rugose, few-haired.
— Subface . .	with a few, long, white hairs.
— Nerves . . .	pubescent, 3 prominent, the 2 outer parallel with margin.
Spike	terminal.
Pedicels . . .	very short, pubescent.
Bracteas . . .	small, lanceolate, undulate, pubescent, at base of each pedicel.
Calyx	inequally 5-fid, ribbed, campanulate, closely covered with long, horizontal, white hairs.
— Segments . .	narrow, linear, very acute.
—— Sinus . .	acute-angular.
Corol	glab. twice as long as calyx.
— Standard . .	circular, waved, intire.
—— Claw . . .	short.
— Wings . . .	oblong, obtuse.
—— Base . . .	one side cleaver-shaped.
—— Claw . . .	short.
— Keel . . .	1-petaled, oblong, divided from base upwards.
—— Sides . . .	$\frac{1}{2}$ hastate.
—— Claws . .	shortish.
Stamens . . .	in=, 1-delphous.
— Filaments . .	setaceous.
— Anthers . .	oblong, basifixt.
Pistil	awled, longer than stamens.
Floration . . .	16th Aug. 1821.
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	Hungary. Sclavonia.

77.

GENISTA OVATA. (W. & K.)

Oval-leaved Genista.

R.D Smith Del.

Pub. by J. & A. Arch. Cornhill. Oct. 1. 1823.

Woodall. Sc.

GENISTA SCORPIUS. (W. SUB SPART.)

Scorpion Broom.

Peduncle . . .	*axillary, multiflowered.*
Branches . . .	*cylindric, striate, spreading, spinose.*
Leaves	*oblong, acute, sericeous.* (W.)
Shrub	stiff, upright.
Stem	cylindric, furrowed, very short-haired.
Leaves	thick, fleshy, spatulate.
— Margin . . .	intire.
— Base . . .	attenuate.
— Apex . . .	emarginate.
— Faces . . .	strewed with white atoms and solitary hairs.
Flowers . . .	2-3 together, pedicel'd (laterals) on the spines.
— Pedicels . .	glab.
Bracteas . . .	minute, acute, 2 under each flower.
Calyx	glab. 2 labiate { 2-dentate. / 3 linear dents. }
Corol	glab.
— Standard . .	reflected at a right ∠ from the keel, suborbicular, subemarginate.
—— Claw . . .	$\frac{1}{4}$ inch.
— Wings . . .	oblong, obtuse, cleaver-shaped.
— Keel . . .	2-petal'd, like the wings.
—— Claw . . .	$\frac{1}{3}$ inch.
Anthers . . .	oblong.
Pistil.	
— Ovary . . .	glab.
— Style . . .	ascending, rather longer than filaments.
— Stigma . . .	minute.
Floration . . .	27th May, 1821.
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	Spain. Narbonne.

GENISTA SCORPIUS. (W. SUB SPART.)

Scorpion Broom.

E.B.Smith Del.

Pub by J. & A. Arch. Cornhill. Oct. 1. 1823.

Wedgwood Sc.

GENISTA TRIQUETRA. (H. K.)

Triangular Genista.

Leaves	*ternate, upper simple.*
Branches . . .	*3-quetrous, procumbent.* (H. K.)
Shrub	feeble, 3 F.
— Branches . .	3-sided and a ridge between each, covered closely with horizontal, white hairs.
Leaves	subsessile, ternate.
— Leaflets . .	lanceolate.
—— Margin . .	intire, hairy.
—— Base & —— Apex .	acute.
—— Faces . .	covered with white hairs.
Raceme . . .	short, terminal on the branches.
Bracteas . . .	2 at base of calyx and 1 on each pedicel, long, linear, pubescent.
Calyx	2 labiate { 3 linear segments / 2 larger segments } pubescent.
Corol	glab.
— Standard . .	suborbicular, emarginate, tapering to a short claw.
— Wings . . .	cleaver-shaped, obtuse.
—— Claw . . .	$= \frac{1}{3}$.
— Keel . . .	2-petaled.
—— Petals . .	oblong, cleaver-shaped.
——— Claw . .	$= \frac{1}{3}$.
Stamens . . .	1-delphous, in=, a little shorter than pistil, inclosed in the keel and wings.
— Anthers . .	oblong, medifixt.
Pistil	ascending, glab. rather longer than stamens.
— Stigma . .	small, diaphanous.
Floration . . .	18th May, 1821.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Corsica.

GENISTA TRIQUETRA. (H. K.)

Triangular Genista.

Leaves . . .	ternate, upper simple.
Branches . . .	3-quetrous, procumbent. (H. K.)
Stem . . .	woody, 3 F.
— Branches . . .	3-sided and a ridge between each, covered closely with fascicled white hairs.
Leaves . . .	subsessile; ternate.
— Leaflets . . .	lanceolate.
— Margin . . .	entire, hairy.
— Base & Apex . . .	acute.
— Faces . . .	covered with white hairs.
Racemi . . .	short, terminal on the branches.
Bracteas . . .	2 at base of calyx and 1 on each pedicel, long, linear, pubescent.
Calyx . . .	5-cleft, segments { linear acuminate / larger acuminate } pubescent.
Corol . . .	glab.
— Standard . . .	suborbicular emarginate. Expands to a little more than
— Wings . . .	[illegible]-shaped, obtuse.
— Claw . . .	[illegible]
— Keel . . .	2-petaled.
Stamens . . .	1-delphous, 10, a little shorter than petal, inclosed in the keel and wings.
— Anthers . . .	oblong, versatile.
Pistil . . .	ascending glab. rather longer than stamens.
— Stigma . . .	small, simple.
Pericarp . . .	18th May, 1851.
Pips . . .	Mr. James Lee's, Hammersmith.
Country . . .	Calabria.

Deutsche
Bücherei
Leipzig

GENISTA CANDICANS. (W.)

Hoary Genista.

Branches . . .	*angular.*
Peduncle . . .	*multiflowered, terminal.*
Leaves	*ternate, obovate, pubescent, covered with adpresst hairs.* (W.)
Shrub	upright, 6-8 F.
Stem	9-ridged, intervals fluted.
— Branches & —— Shoots	sericeous, ridged.
Leaves	alternate, ternate.
— Leaflets . .	obovate.
—— Margin . .	intire, ciliate with white hairs.
—— Base . . .	cuneate.
—— Apex . .	obtuse, mucronate.
—— Surface . .	a few long, adpresst, white hairs.
—— Subface —— Axis .	numerous, „ „ .
——— Branches	0.
Stipules . . .	grooved, acuminate, pubescent.
Inflorescence . .	capitate, 3-4-flowered.
— Pedicels . .	very short, pubescent.
Bracteas . . .	2 at base of calyx, linear, pubescent, acute.
Calyx	short, tubular, 3-fid, covered with subadpresst hairs.
— Segments . .	acuminate.
—— Sinus . .	acute.
Corol.	
— Standard . .	orbicular, emarginate.
—— Claw . . .	short.
— Wings . . .	cleaver-shaped.
—— Limb . .	oblong, obtuse, 1-sided.
—— Claws . .	short.
— Keel . . .	2-petaled.
—— Petals . .	like the wings and = to them.
Floration . . .	16th July, 1821.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Italy.

Bayerische Staatsbibliothek München

80.

GENISTA CANDICANS. (W.)

Downy Genista.

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Watson, Peter William,

Dendrologia Britannica, or Trees and Shrubs that will live in the open air of Britain throughout the year

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